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STATE OF COLORADO
BUREAU OF MINES

State Capitol, Denver
JOHN T. JOYCE, Commissioner of Mines

ANNUAL REPORT FOR
THE YEAR
1927



Denver, Colorado
Ford-Robinson Printing Co.
1928

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STATE OF COLORADO
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LETTER OF TRANSMITTAL

To His Excellency,
THE HONORABLE WILLIAM H. ADAMS,
Governor of Colorado.

Sir: In compliance with Section 3392 of the Compiled Laws of Colorado, 1921, I have the honor to transmit herewith the Annual Report of the State Bureau of Mines for the year 1927.

Respectfully submitted,

JOHN T. JOYCE,
Commissioner of Mines.

State Capitol,
Denver, Colorado,
May 10, 1928.



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PERSONNEL OF THE BUREAU OF MINES OF THE STATE OF COLORADO

JOHN T. JOYCE, Commissioner of Mines.....	Denver
T. R. HENAHEN, Inspector, District No. 1.....	Denver
M. J. McCARTHY, Inspector, District No. 2.....	Canon City
R. J. MURRAY, Inspector, District No. 3.....	Salida
MISS ETHEL M. FLANDERS, Chief Clerk.....	Denver
MRS. A. M. NICKERSON, Stenographer.....	Denver

DISTRICTS OF INSPECTION

DISTRICT No. 1—Moffat, Routt, Jackson, Grand, Larimer, Boulder, Gilpin, Clear Creek, Jefferson, Denver, Weld, Adams, Arapahoe, Morgan, Logan, Sedgwick, Phillips, Washington and Yuma Counties.

DISTRICT No. 2—Douglas¹, Elbert, Teller, El Paso, Fremont, Custer, Huerfano, Las Animas, Pueblo, Lincoln, Kit Carson, Cheyenne, Kiowa, Crowley, Otero, Bent, Prowers and Baca Counties.

DISTRICT No. 3—Rio Blanco, Garfield, Mesa², Delta, Eagle, Summit, Pitkin, Lake, Park and Chaffee Counties.

DISTRICT No. 4—Montrose, San Miguel, Dolores, Montezuma, Ouray, San Juan, La Plata, Gunnison³, Hinsdale, Saguache³, Mineral³, Rio Grande, Alamosa, Archuleta, Conejos and Costilla Counties.

¹ The northern part of Douglas County has been temporarily transferred to District No. 1.

² The southwestern part of Mesa County has been temporarily transferred to District No. 4.

³ The former action of this department transferring part of Saguache, Gunnison and Mineral counties to District No. 3 was rescinded May 1, 1927.

INTRODUCTION

The activities of the Bureau of Mines during 1927 were confined to the usual routine, no funds for any special work being provided.

The inspectors visited practically all of the operating metal mines, quarries, mills, smelters and railroad tunnels at least once during the year. Most of the larger operations were inspected more than once. The object of these inspections is to eliminate, as far as possible, unsafe conditions and practices. In general, this work meets with the lively co-operation of the mine operators.

The Commissioner and Inspectors are anxious to help the mining industry in every legitimate manner and wish to be called upon whenever their services can be used.

Inquiries regarding the mines and mineral resources of the state and questions regarding the demand and market for less common mineral products are constantly coming into the Bureau. An earnest endeavor is made to furnish the information desired. Helpful co-operation is often received from the Colorado Geological Survey, the United States Bureau of Mines and the United States Geological Survey.

On account of lack of funds it has been impossible to give the State Mineral Collection the attention it deserves. During the past year several new specimens have been received.

There has been recently added to the state mineral exhibit, a large and valuable collection of mineral specimens gathered by the late Harry A. Lee, who was Colorado's first commissioner of mines. This collection was presented to the state by Julius J. Lee of Salt Lake City, Utah, son of the late commissioner, and will be kept together and intact as a tribute to the memory and valuable services he rendered the state in building up the great mining industry which laid the foundation for our state's commercial greatness.

The Commissioner takes this opportunity of expressing his appreciation of the loyal and efficient services that have been rendered by the entire personnel of the Bureau during the past year.

METAL MINING IN 1927

Metal mining is one of the greatest contributors to our national wealth. As a necessity of life, it enters into every branch of industry; it is necessary to our happiness; it supplies, by far, more than half of the freight handled by railroads and other transportation agencies; it contributes, through various means of taxation, magnificently to our public coffers and furnishes employment to millions of workmen throughout the nation. This being admittedly true, it is difficult to understand why the mining industry as a whole in the state of Colorado, which, according to geological statistics, embraces within its confines the most extensive mining area of any other state of the western mining fields, should lag or be at all sluggish as compared to the flourishing and prosperous condition in some of its neighboring states whose natural mineral resources cannot in any way favorably compare with those of Colorado in extent, wealth and possibilities.

Colorado Ranked at Top of List

A study of the annual metal production of the nation since the beginning of the present century will reveal that not many years ago, and prior to the World War, Colorado ranked first in the production of gold and silver and held a leading position in the production of the other industrial metals.

The abandonment of the Denver, Salida and Pueblo smelters in 1919 and 1921 had a far more disastrous effect on the mining industry than all of the ill effects arising out of the postwar depression. Other states recovered in due time following the period of depression mentioned, because they were blessed with milling, smelting and modern metallurgical plants for the treatment of their ores, and Colorado would do likewise under similar advantages.

So much for the past, and the state metal mine inspectors' reports, which are appended, tell of the activities in various districts of the state for the past year. But what about the future of metal mining in Colorado, its prospects, its possibilities, its opportunities, and its needs in the way of other metallurgical facilities and processes for the treatment of our ores? These questions offer a field of great latitude for thought and study. They give the optimist a chance to smile and praise and the pessimist a chance to frown and condemn. Both being extremists, the ravings of the one and the jeers of the other must be cast aside, and in order to arrive at the actual facts we must turn to the revelations of the prospectors, the mine developers and the researches of learned and scientific geologists.

According to statistics furnished by the United States and state geological surveys, there are between 25,000 and 30,000 square miles of highly mineralized lands in the State of Colo-

rado, extending from Wyoming on the north to New Mexico on the south and west, from range 68 W. 6th P. M., which passes through the city of Denver, to the eastern boundary line of Utah, and that less than one-sixth of this vast area has been geologically studied and mapped.

Out of this area it is safe to say that the mines of the state, operating and idle, collectively, could be embraced in space less than 1,000 square miles. Yet from this small area of less than 1,000 square miles there has been produced in metallic wealth in gold, silver, copper, lead and zinc, upwards of 1,600 million dollars, an amount about equal to the entire assessed valuation of the state at the present time.

The remaining portion of this vast area, which has not been carefully geologized, in all probability presents a like condition, with a probably lesser proportionate exposure, and while geologists can do much to reveal its prospective worth, it will require much research, prospecting and detailed work, scientifically and otherwise, to determine its great possibilities.

The old prospector did his work well and Colorado owes much to his courage, privations and sacrifices, but his field for future operations, though not entirely exhausted, is now quite limited. New and more scientific methods must be employed and advanced modern science is paving the way by the introduction and use of geophysical prospecting instruments. In order for Colorado to regain the high position it once occupied among the states of the Western mining fields and to attain the height of prosperity to which it is entitled from the development of these vast unexplored mineral resources, it must be well supplied with modern, up-to-date reduction, milling and smelting facilities.

At the present time there are only two smelters operating in Colorado, one at Durango, which serves the San Juan fields, the other at Leadville, which serves its immediate and contiguous territory. This leaves the western slope and the eastern portion of the state practically without a plant to treat the ores of their great and well-known camps.

It may be recalled that while smelters were operating at Denver, Salida and Pueblo, the mining industry in Colorado was exceedingly active and highly prosperous. The dismantling of these plants in 1919 and 1921 more than post-war depression marked the beginning of its downward trend. The average annual production of Colorado mines for a period of 40 years, from 1878, which marked the beginning of the Leadville boom, to 1918, the year of the Armistice, was in round numbers \$35,000,000. The total annual production of our metal mines in 1913, the year preceding the war, and 1918, was very nearly equal, approximately 35 million dollars in round numbers for each of said years. The high increase in the intervening years was due to

forced production and high war prices. In 1921 this average production had dwindled to a little more than 14 million dollars, a decline of 21 million dollars during the space of the three years in which the smelters mentioned ceased operations. For instance, Clear Creek County in 1913 and 1918 had an average annual production of \$1,100,000 for each year, while in 1921 it had dwindled to \$262,000.

Like proportions prevailed throughout the state, except in counties immediately contiguous to the two operating plants mentioned. Surely it cannot be reasonably contended that this unwarranted decline was the result of a simultaneous depletion of all the mines in the various mining districts of the state. The increase in production in such counties during the recent revival was quite favorable, while in the other counties it was scarcely noticeable. For example, Lake County with its smelter at Leadville has an increase of more than 125 per cent, while Clear Creek without smelting facilities, in easy reach, has an increase of less than 23 per cent. San Juan County, with the Durango smelter at its door, increased upwards of 300 per cent. The remaining northern counties show no increase at all.

Conditions have changed materially in the past few years by the wonderful advances made in metallurgy by which complex and rebellious ores can be profitably treated by a complete separation of the zinc from the lead, more particularly through selective flotation. Given a plant comparatively within easy reach, such as those operated by the International plant at Tooele, and the United States Smelting Company's plant at Midvale, Utah, which combine flotation, concentration and smelting, which will relieve mine operators of heavy transportation charges in many cases equal to the margin of profits, the mines of the counties of Boulder, Clear Creek, Gilpin, Jefferson and Park, 60 per cent of which are lying idle, will at once be restored as active producers and soon be revelling with renewed prosperity as they did in pre-war periods when they were blessed with adequate milling and smelting facilities.

To these counties may be added by the completion of the Moffat Tunnel, the mines of Grand, Routt and Moffat Counties, known to contain large veins of good milling ore and some high grade as well, that have never been active producers because of the lack of transportation facilities. Again, by the construction of the Dotsero cutoff, now practically assured, the mines of the western slope will also become available under as favorable, if not a lower freight rate, as that under which they are now shipping to the Utah plants.

The wonderful changes that have taken place in Colorado in the past few years in industrial and transportation conditions, the advancement in science and metallurgy open up a magnificent field for the construction of a concentrating and smelting plant at or in the vicinity of Denver or some other cen-

tral point, similar to the Tooele plant which in the first year of its operation increased the mineral output of Utah upwards of 16 million dollars, which it still maintains. It would rejuvenate the mining camps of the state, give employment to thousands of bread earners, open new markets for the products of our farms and factories, rehabilitate our cities and towns and add multifold millions to the wealth of our state.

CONDENSED REVIEW OF THE MINING DISTRICTS

District No. 1, by T. R. Henahen

The mining industry in the northern counties, namely, Boulder, Clear Creek, Gilpin and Grand, has been more or less retarded on account of the low price of metals which has prevailed since September, 1926. These conditions should not exist as the consumption of these metals is greater than the production.

Boulder County—In Boulder County there has been a great deal of activity in the metal mining industry. Some new discoveries have been made and many of the old mines have re-opened so that the outlook in this county for 1928 is more promising than it has been for several years.

Tungsten mining in this county has been more profitable to the mine operator than it has been since 1918. Immediately after peace had been declared in the World War, the price of tungsten dropped so low that the mines ceased operation. In 1925 the American steel manufacturers began using tungsten in their high grade steel and the result was that the price of this metal advanced so that the mine owners have re-opened their mines and are now operating at a profit instead of a loss.

The fluorspar industry at Jamestown, though inactive, was not as profitable in 1926 and 1927 as it was for many years previous.

Clear Creek County—This county is perhaps the most prominent in Colorado. The first lode mineral discovery in the state was made in the winter of 1859 by Captain George Jackson near the mouth of Chicago Creek, now within the city limits of Idaho Springs. In the upper part of the county, where the values are mostly in silver and lead, many new properties are being developed and the old ones re-opened.

The most important event in this county during the year was the re-opening of the Newhouse tunnel by Sparks and Thorne. This project is the key to the mines located along the line of this tunnel in this, and Gilpin County. The success of this undertaking will unwater the mines on Quartz Hill and Nevada Hill. It will restore these two counties as leading producing mining counties in Colorado.

Gilpin County—Gilpin County is one of the oldest and one of the most productive counties in Colorado. Time and again

writers have told about what this county has produced in gold and silver. The truth is that this county has produced millions of dollars of which no record has been kept. In the early '60s thousands of tons of high-grade ores and concentrates were shipped to Swansea, Wales, for treatment. Millions of dollars of gold bullion was sold to the banks throughout the country, so it is impossible for anyone to arrive at the exact amount of its production.

Grand County—Grand County is one of the most promising mineral counties in the state for the amount of development work done. Its progress as to mining has been retarded because of inadequate transportation facilities. In fact, it has never been able to ship any ores except of the highest grade. If the Moffat tunnel ever serves any useful purpose, it should place Grand County in the fore as a mineral producer. I am of the opinion when that section of the country lying north and west of Jones Pass is thoroughly prospected for a radius of 10 or 15 miles square, which would carry you to the peaks above Williams Forks and to the south and west beyond Mt. Vasquez to the north and east, there will be found many gold and silver, lead, copper and zinc mines that will be almost inexhaustible for years to come. In fact, many are already discovered and all they need is development to convert them into heavy producers. The veins and fissures are well defined, and the majority of the mines will be found above timberline. The mountains in places are very rugged. The formation is favorable for ore occurrence. There is plenty of timber and water for all required purposes.

Jackson County—This county is noted for its copper deposits and lead and zinc ores. On account of its being inaccessible from smelters and railroad transportation, its mineral deposits have not been developed as they should have been.

Its fluor spar deposits are numerous and the spar is of the best quality.

Larimer County—Larimer is one of the most promising mining counties in Colorado. It was the scene of considerable activity during the year in development work. The values found in its ores in and around Manhattan are principally gold and silver. Fairly good gold values can be found on the surface.

Routt County—The Hahns Peak mining district is among the oldest mining districts in Colorado, and in former years it was noted for its very rich placer mines which produced hundreds of thousands of dollars of the yellow metal. These mines have long since been abandoned.

Lead mining has taken their place and I expect to see this district become a large producer of the precious metals in the next few years. The following mines are in operation today: The Blue Jay, The Lula Group, The Royal Flush.

District No. 2, by M. J. McCarthy

Custer County—There were eight metal mines operating in Custer County during 1927. The Terrible mine at Ilse is the principal producer. Sixty men are employed at the mine and mill. The average production was 3,600 tons of crude ore and 180 tons of lead concentrates. During the year developments disclosed a fine vein of a good milling grade. Later, developments will continue to the depth of 1,000 feet to prove its downward continuity. It will doubtless prove to be the largest ore body ever discovered in the county, and one of the state's greatest future producers. Outside the Terrible mine, most all other operations were of a prospecting nature. Most of the prospects have a good showing of ore and doubtless some of them will become producers during 1928.

El Paso County—The mill of the Golden Cycle Mining & Reduction Company is being operated with a total of 190 men. This mill depends very largely on the ores of the Cripple Creek district for its production and especially on those from the Cresson mine. For the last ten months this plant has been treating from 24,000 to 28,000 tons a month of Cripple Creek ores.

Fremont County—There were two zinc plants operating in Fremont County during the year 1927. One of them has temporarily suspended operations. While there are several good prospects in the Cotopaxi section, only one, the Gumaer, about a mile from Cotopaxi, was operated, with a force of 15 men employed on development work.

Teller County—The mining interests in the Cripple Creek district are showing an improvement as compared with conditions there one year ago. This is largely due to the fact that the field affords better opportunities from all viewpoints than any other gold mining district in the West.

Production from the mines of the Cripple Creek district for 1927 will be in excess of \$4,000,000—possibly a slight decline from last year's production.

The Portland Gold Mining Company during 1927 sunk their main or No. 2 shaft to a depth of 3,100 feet. Manager Jones and his assistants confined the principal developments to the upper levels of the mine, and about one month ago encountered an ore shoot on the 2,600-foot level on the south No. 1 east vein. Up to date this vein or ore body has proved to be 90 feet long and about 14 feet wide, with the values ranging from one ounce to as high as 17 ounces of gold per ton. They are driving on level 27 for this same ore shoot.

The Cresson Consolidated Gold Mining & Milling Company has operated the Cresson mine steadily during 1927, with the exception of about 18 or 20 days during the first part of November, when it became necessary to stop work in the mine until

the main shaft of the big hoisting engine was replaced with a new shaft. This shutdown reduced their production for the month of November about 5,500 tons.

Mr. Gardiner, the mine superintendent, has driven a drift along the funeral-dyke on level 20 which is 2,400 feet deep, for a distance of 100 feet all in a shipping grade ore. In driving the drift they drove along the core of the vein for about 14 feet and got assay returns from some samples that ran as high as \$12 a pound. They do not know the extent of this ore body nor of the high grade streak, as they are getting ready to put in chutes so as to start stoping. The average production of the Cresson mine is about 10,000 tons a month. They are running about normal at this time.

Henry Christensen, superintendent for the Granite Gold Mining Company, is sinking a winze on the 2,000-foot level of the Ajax shaft, on the New Market vein. The winze is down about 45 feet in ore all the way, which will average about \$30 a ton in gold.

The United Gold Mines Company, which recently declared a cash dividend of \$50,000, is operating the Rose Nicol, the Vindicator, the Golden Cycle, the New Market ground through the Dillon shaft, and a number of smaller mines throughout the district. At present the Vindicator is the most active. On level 8 the company has opened up a new ore shoot in virgin ground. This ore body is located near the old Hull City workings. The ore shoot is about 200 feet long and the screenings from this ore run from \$30 to \$35 gold per ton. Henry Martin, leasing on level 10, has opened up a still larger body on the same vein, though 200 feet deeper and is making a steady shipment of a fair grade ore. The Vindicator is looking better than it has for five years. Alfred H. Bebee is superintendent and he is the most successful man in that position that they have had on the Vindicator for many years.

The Queen Exploration, Incorporated, John Tait Milliken, general manager, is now operating through the Queen shaft. A spur of the Midland Terminal Railroad to the mine has been completed, which will increase the present production of 70 tons per day to 140 tons per day.

A. F. Carper of the Stratton lease is still shipping a fair grade of ore from the Orpha May. Mr. Carper is also working through the Last Dollar shaft and driving two drifts into known ore shoots on the Los Angeles ground adjoining the Portland property.

The Portland Gold Mining Company's mill at Victor treats from 500 to 600 tons per day, all from the Portland mine.

The Eagle Sampler plant treats ore, or rather samples from 2,500 to 3,000 tons a month of Cripple Creek ore.

The Cripple Creek mining district, as usual, still pays the highest average wages, offers the best of living accommodations and provides the best of transportation and working conditions. At the present time there are 800 men employed in and around the mines in Cripple Creek and Victor.

District No. 3, by R. J. Murray

Lake County—The largest shippers in Lake County are the Deep Mines Company and the Climax Molybdenum Company. The Deep Mines Company, under the management of George Argall, has operated through the Greenback and Pyrenees shafts on Iron Hill continuously during 1927 and produced an average tonnage of 7,500 tons per month of silver, lead, zinc sulphide ores.

The Climax Molybdenum Company has mined and milled on an average of over 800 tons daily for the past year and is equipped to mill a much larger tonnage in the future. This is the largest known molybdenum mine in the entire world.

The Ibex Mines Company, operating through their different shafts, has for the past year kept up an average production of 800 tons monthly of gold, silver, lead, copper, zinc and iron ores, mined under the leasing system.

The Yak tunnel confined its operations during the year mostly to development work and retimbering its tunnel. A portion of the tunnel was retimbered during the year.

The Star No. 5 and Waterloo shafts, operated by Cramer & Co., have produced a large tonnage of manganese and low grade lead-carbonate ores during the past year.

Numerous other small properties have produced their quota of manganese and silver-iron ores in the Leadville district.

A new company, known as the Golden Rod Mining & Smelting Company, has entered the Leadville district within the past year, and has taken over and unwatered the Helena mine, located in Iowa Gulch. This company intends to carry on a campaign of development work in the Iowa Gulch section far greater than any attempted heretofore.

The Penrose Mines Company, formerly known as the Down Town mines, under the management of Jesse F. McDonald, has made several improvements on its surface works preparatory to the installation of new pumps and machinery for the unwatering of these properties. When this work is completed this company will again be heavily producing gold, silver, lead, zinc, copper, manganese and iron ores, the largest known producer of these combined metals in the world.

The Seventh Street lease, adjoining the Penrose, has produced a fair tonnage of high grade leads and carbonates during the year.

The Seneca mine, operated by the Henrietta Mines Company, with George Schreiber in charge, has mined a fairly large tonnage of silver-iron oxide and low grade lead carbonate ores.

The Fanny Rawlings mine and a number of other operations in the Leadville district have sent out their annual tonnage of ores. The smelter, during the past year, has run on an average of two to three furnaces.

The Zinc-Lead mill has operated during the year with a daily tonnage of 250 tons of sulphide ores from the Yak, Deep Mines, Ibex and other properties in the Leadville district.

Plans are being made for the unwatering of the Fryer Hill district during the year 1928.

Eagle County—The Empire Zinc Company, through its advanced developments and tests, has proved that there exists in its holdings the largest deposit of lead-zinc sulphide ore in the United States. At the present time this company is carrying on a vigorous campaign of developments.

The Polar Star mine in the Fulford mining district operated with a few men on development work during the past year. A new operation is now under way and is being carried on from Minturn in Eagle County by the Cross Creek Mining Syndicate. New equipment has been moved in within the past three months.

Chaffee County—The operations in Chaffee County during the past year consisted of work on the Madonna and Marshall tunnel in the Monarch mining district. A new all-steel hydraulic dredge is under construction and will be in operation before the end of this year in the bed of the Arkansas River near Granite. This is something new in the way of a gold-saving machine. The process is known as a suction plow arrangement. The Arkansas river at this point is known to contain very rich gold placer gravel and from their preliminary work, tests and experiments, the owners of this newly devised dredge are confident of rich returns from its operation.

Summit County—The Wellington mine has produced an average tonnage of approximately 110 tons per day of crude ore during the past year, except while operations were suspended for a short time, when the mill was being changed to selective flotation. Reports from Mr. Henderson are very glowing as to the operation and saving of their new mill. Considerable development work, which was carried on by this company during the year, resulted in the opening of new large ore bodies which will, with reasonable certainty, place the property among our heaviest producers for 1928.

The Tiger mine, under the management of John A. T aylor, has operated continuously during the past year, with an average force of 85 men, and has produced three or four carloads of lead and iron concentrates. Several carloads of iron concentrates were produced during the past year on experimental work in the mill.

The Aco Mines Company, operating the Seven-Thirty, Warrior's Mark and Detroit shafts, has carried on a great deal of

new development work and is blocking out mill ores at the Detroit. This company has recently taken over the Extension mill and at the present time is installing new machinery for the treatment of the Detroit ores. George Robinson is the local manager for this company.

The Blue River dredge, under the management of Walter W. Radford, has operated continuously on what is said to be very good placer ground, with exceptionally satisfactory returns for the year.

A new feature in dredging is the Summit Gold dredge, operated by some local persons. This is a caterpillar device and will dig to a depth of probably ten feet. It is operated at the foot of Hoosier Pass and thus far, it is said, quite successfully.

The Montezuma district of Summit County is one of the most heavily mineralized sections of the state, and while there was considerable activity there during the past year, it has never received the attention its richness deserves. It has always been seriously handicapped and its progress retarded by lack of transportation facilities. The average haul at present is at least nine miles to the railroad over rough wagon roads. In these days of modern advancement it seems that these difficulties could be largely overcome by the construction of a system of truck roads to and from the main sections. New developments which have revealed large bodies of good milling ore, coupled with the fact that large bodies of the same class ores were left standing in the older mines, seem to justify the construction of good truck roads. Given this facility, Montezuma will flourish.

Pitkin County—Continuous operations have been carried on at the Cowenhoven, Midnight, Newman, Star, Smuggler and other properties during the year. A few mines have ceased operations owing to the unwarranted low price of metals which prevailed during the year. However, the Aspen mining men are confident that the new development work now being carried on in the Cowenhoven and other properties will prove the rejuvenation of that section and that it will, in the near future, resume the place it formerly held among our best producing counties.

Park County—Park County, through the new ore bodies opened up on the London mine, and in new developments in several other prominent properties in the Alma and other mining districts, has again become one of our active counties. Therefore, it is quite evident that the year 1928 will see a large tonnage coming from this county.

Saguache County—The Rawley mine, the banner producer of this county, has sent a daily tonnage of 350 tons of lead-zinc-sulphide ores to their mill. This is by far the largest tonnage-producer and employer of labor in Saguache County.

The Cocomongo mine carried on development work for the entire year, and has blocked out from 30,000 to 50,000 tons of lead-zinc-sulphide ores for future milling.

The Orient mine, owned by the Colorado Fuel & Iron Company has carried on a plan of new development work and has maintained an average of 300 tons daily of hematite iron ores for the company's plant at Pueblo. Other smaller operations contributed to the tonnage of this county. Considerable new work in the way of geology is being done by state and federal forces, in this particular district.

Mineral County—The Wagon Wheel Gap mine has produced an average of 500 tons per month of concentrated fluorspar from its mills. A ready market is obtainable for all of these concentrates by this company, the larger portion being used by the company at its C. F. & I. plant at Pueblo.

The Commodore mine is the largest metal tonnage producer in the Creede district, while several other smaller lessors and operators are contributing their share to the tonnage produced by this county. It is said that a new future in the way of milling is possible for this county during the coming year.

Rio Grande County—The Little Annie group, operated by Judge J. C. Wiley and Jack Pickens, was the scene of a rich gold strike during the past year. It is today one of the richest strikes in Colorado. More than \$170,000 worth of ore has been shipped from this property during the past year with less than 60 tons mined and still a mark has not been made in the high-grade ores. After the ores are broken in the stopes and the high-grade, rich ores picked out, shipments made recently show a trifle better than 80 ounces of gold per ton. The high-grade or picked ores average from \$30 to \$60 per pound. Some \$68,000 worth of ore has been shipped from this property during the past few months. The vein in the Winchester tunnel is the deepest found in that section, and shows strongly in the bottom of the tunnel. In fact, it is the richest find uncovered in Summitville to date.

Garfield County—The Rifle mine of the U. S. Vanadium Company is producing and milling 3,500 tons per month of vanadium-bearing ores. During the past year this company has increased the capacity of its mill and carried on a large amount of new development work at its mine. It is said to be one of the largest operations of its kind in the United States. The company is planning to increase its tonnage during the coming year.

Gunnison County—The Akron mine at Whitepine curtailed its monthly shipments to 150 tons, while pushing the newly planned developments as rapidly as possible. When this work is completed, the management plans to ship at least 1,000 tons per month of heavy lead-zinc-silver ores. A number of other properties at Whitepine and in the various mining districts of the county continue to ship their usual quotas. Among the outstanding features of mining in this county was the discovery of an immense vein of high-grade manganese, on which developments on a large scale are now under way.

District No. 4, by T. R. Henahen

Dolores County—Rico is the one mining camp in Colorado that has been revived during the past two years on account of its production of lead and zinc ores. Metallurgy has brought this camp from the graveyard stage to one of the largest producers of these metals in Colorado.

The International Smelting Company installed a very complete 225-ton custom-concentration and flotation plant in the town of Rico in 1926. Practically all mill ores mined in this district are milled at this plant. This company has secured bonds and options on the following properties in this district, namely: Shamrock, Lexington, Enterprise, Newman tunnel group, Group tunnel, Isabella and others.

The St. Louis Smelting & Refining Company is operating the following properties: Silver Swan group, Wellington group, Mountain Springs group, Swickheimer group and Iron group.

The Argentine Mining Company is operating its properties through the Rico-Argentine, Blackhawk, Log Cabin and Blaine tunnels. This is really one of the best developed properties in the district today, with an unlimited amount of ore available.

The Union Carbonate and Buckhorn mines are doing considerable development work in reopening their properties. The Pro Patria group of mines is being developed by the Enterprise Mining Company. The Emma mine located at Dunton is being reopened. The Smuggler mine at Dunton is being operated by the Mt. Pleasant Mining Company.

Hinsdale County—This is the pioneer county of the San Juan district, and was one of the best producers of precious metals for many years. What is needed in this county at the present time is a custom mill, such as the one located at Rico. There are many mines in this county that can produce 10, 20 and 30 tons per day if there were mill facilities to treat the ores. Many of these properties could be operated at a handsome profit under these conditions, which today are lying dormant.

The following mines were in operation at the time of my visit there a short time ago: Ocean Wave, Little Casino, Big Casino, Empire Chief, Golden Wonder, General Sherman, Black Crook, Belle of the West, Fanny Fern, Big Blue and others.

The Ute and Ulay group was one of the largest producers in this state in the early days and is located a short distance from Lake City. The owner, Mr. Burke, contemplates erecting a large flotation mill to mill the ore on the ground.

Ouray County—The leading mining district of Ouray County is in the southern portion, embracing part of the Uncompahgre Mountains, recognized as one of the most rugged mountain chains in the state. The drainage is through the Uncompahgre River and its tributaries, the stream rising in a mountain pass forming the southern boundary and flowing approximately north through-

out the country. A few miles below its source it enters a narrow valley that gradually widens into a park one-half mile wide and four miles long. At the south side of this park the stream enters a canyon that has so far defied passage to the Colorado railroad builders. Today it is traveled over in safety by a good automobile million-dollar highway literally cut into one of the canyon walls. In places the canyon walls stand almost vertical as the road appears to hang over the stream bed, which is several hundred feet below. This canyon is one of Colorado's scenic attractions, the beauty and ruggedness of which must be seen to be appreciated.

Not one-fourth of the mining area in this county has been prospected.

The following mines were in operation in this county at the time of my visit there: Barstow, Beaver-Belfast, Magnet, Lucky Twenty, Sutton, Bull Durham, American Nettie, Indiana, Bachelor, Camp Bird, Guston, Bright Diamond, San Juan Chief, British Queen, London and others.

San Miguel County—The history of lode mining in this county has been one of steady advance from July 4, 1876, to the present. On the above date the Smuggler-Union mine was discovered and it has been a steady producer from that day to this of gold, silver, lead and zinc. In October, 1927, the buildings and plant at what is known as the Pennsylvania tunnel were destroyed by fire. Up to that time the Smuggler group of mines was the second largest producer in Colorado. The daily output was between 700 and 800 tons per day. I believe that if the figures could be obtained as to its output in dollars and cents, that it has produced more money than any other mine in Colorado.

The mines in operation in this county to date are: the Alta group, Smuggler-Union group, Tomboy group, Black Bear, Carbonero, San Bernardo, Butterfly, Silver Bell, Badger tunnel, Blind Tom and Crown Point.

San Juan County—The mines in the various districts in this county are, owing to topography, mainly opened through tunnels and require no expensive hoisting or pumping plants, but as a rule, must be equipped with trams to transport ores to mills at a lower altitude. The mine operations are not only up to the general standard, but in many respects excel in concentration and flotation, which has been systematically pursued for a number of years.

The results obtained have been marvelous. The application of electricity has reached a high state of perfection in this county. The power is generated on the Animas River below Silverton and transmitted to the mine where it is utilized for operating mills, compressors, lighting, etc. The mine and mill equipment is thoroughly modern.

The Sunnyside mine was discovered in 1873 and has been a constant producer of gold, silver, lead and zinc since that time. The mine is located about four miles north and west of the town of Eureka. An aerial tram four miles in length runs from the mine to the mill. The milling methods are concentration and flotation. The mill is operated by gravity and was constructed with steel and concrete, having a capacity of 1,000 tons per day. It is one of the most complete milling plants in America. They mill from 800 to 900 tons per day. This is the largest producing mine in Colorado. This mine is operated in a safe, sound way with all modern improvements.

Mines in operation in this county are: the Sunnyside group, Mayflower group, Caledonian group, Aspen, Lackawanna, Iron Magnet, Brooklyn, Little Nation, Garry Owen group, Lucky Jack, Whale, Iowa Tiger, Kittimac and Ridgeway.

La Plata County—The Gold King mine in La Plata County is being developed by M. S. McCarthy and associates. They are erecting a mill and a tram from the mine to the mill.

The May Day mine is operated by David B. Miller and associates and is a steady producer.

Several small properties are being developed in the district by prospectors.

Montrose County—Some little prospecting is being done in the carnotite fields for uranium and vanadium.

NONMETALLIC MINES*

The production of stone and clay in Colorado has reached a point where it forms a very important factor in the industrial life of the state. The value of the combined annual output runs well into the multifold millions. The operation of all stone quarries and clay pits comes under the jurisdiction of the State Bureau of Mines. During the past year there were 67 quarries and pits in operation in various parts of the state. They furnish employment to hundreds of men, as shown by the following official reports by the state mine inspectors:

During the past year there has been considerable activity in the feldspar industry east of Jamestown in Boulder County, the total production exceeding 2,000 tons. Lime production was about 40 tons daily.

Jefferson County is strictly a clay-producing county. It produces about 1,000 tons of fire and plastic clay per day, all of which is shipped to Denver to the manufacturers for making brick, tile, fire brick, sewer pipe, etc.

In Bent County the Marlman limestone quarry was operated most of 1927 by L. W. Lewis Sons of Emporia, Kansas; J. G. Lewis, of La Junta, superintendent. The quarry operates nine months of the year and produces 800 tons of crushed rock per day, employing 130 men. The material was used as ballast on the Atchison, Topeka & Santa Fe Railroad.

In Douglas County there are three clay mines in operation, and the production is about 2,000 tons a month, most of which is shipped to the brick and tile companies of Denver. Fourteen men are employed in the clay mines of Douglas County.

In El Paso County is one limestone quarry, one lime kiln plant, one clay pit. The Western Lime Company is making about 20 tons of burned lime out of a production of 45 tons of rock per day.

Fremont County has two gypsum quarries producing from 20 to 30 tons a day; five clay mines which produced in the aggregate 9,000 tons during the period of operation; ten lime quarries producing approximately 1,500 tons daily; one travertine quarry which produces about 1,200 cubic feet; three stone quarries averaging 80 cubic feet daily; two brick plants and two cement plants. About 900 men were employed at these plants.

In Huerfano County there is one clay mine in operation, which employs 15 men. Production 25 to 30 tons per day.

Las Animas County has one clay pit and a brick plant in operation, employing 24 men. Production 20,000 bricks per day.

* The average daily production mentioned in the foregoing is based upon an average operation period of 25 days per month.

In Otero County there is one clay pit and one brick plant operating, employing about 15 men. Production about 15,000 bricks per day.

In Pueblo County there are 7 clay mines producing about 211 tons daily; two limestone quarries with a daily production of about 900 tons; one stone quarry, one kiln plant and the Eiler slag dump and 2 brick plants operating, which are employing a total of 355 men.

Chaffee County granite totaled 35,000 cubic feet as follows: 10,000 feet of what is known as gray stone which is used for monumental and base purposes; 10,000 feet of stone used principally for building purposes, bases, etc.; 15,000 feet of stone used for foundation and other purposes. About 12,000 tons of lime were produced.

In Mineral County about 900 tons of bentonite were produced during the year.

In Gunnison County the Yule Marble quarry has shipped several carloads monthly to Kansas City, Omaha and other large cities, amounting to about 90 cubic feet per day. Other quarries are carrying on development work.

Bell's quarry is operating in La Plata County, producing 25 to 30 tons of limestone per day.

Oil Shale—The Washington Shale Oil & Products Company of Garfield County has produced some oil from its shales, but is at present installing what is known as the White continuous retort. This company will probably have the retort operating by the end of the present year. Very satisfactory results were obtained in the laboratory model of the retort above mentioned. The Indexoline plant has carried on experimental work during the entire year, and has produced enough shale for this purpose.

On April 16, 1927, Hon. George B. Walker, mine inspector for District No. 4, died at Durango, Colorado, and in view of the urgent need for curtailment of expenses as far as possible in the different governmental departments of the state in order to aid the present administration to meet its pressing financial needs, the matter of the appointment of his successor was taken under advisement by his Excellency, the Governor, and the Commissioner of Mines. After a careful study of the evident recession of activities during the year in several mining sections, metallic and nonmetallic, it became apparent that by judicious arrangement and assignments and extra effort on the part of the three remaining inspectors, they could perform the work for the area embraced in the combined districts quite successfully for the time being and until such time as activity in the various mining districts had become normal or nearly so. This would result in substantial saving by the Bureau for the present biennial period.

Accordingly, it was decided that the appointment of a successor to Inspector Walker be temporarily withheld and the inspection work for that district be divided among the remaining three inspectors until such time as mining activities, which I am pleased to report are on the up-grade, have reached a stage that, in the opinion of the Commissioner, the fourth inspector should be appointed.

In the performance of this work during the year 1927 the acting inspectors spent 234 days in District No. 4, making 115 inspections as compared with 72 during the previous year.

HISTORICAL NOTE

The Bureau of Mines of the State of Colorado was established by an act of the Tenth General Assembly, approved March 30, 1895. This act repealed a previous act creating an "Inspector of Metalliferous Mines," which was passed in 1889. The Bureau of Mines law established the office of Commissioner of Mines, provided for in the State Constitution, and charged him, among other things, with the supervision of metal mine inspection and the enforcement of laws relating to safety and health in metal mines. Subsequently this was broadened to include "any ore mill, sampling works, smelter, metallurgical plant, rock quarry, clay pit, railroad tunnel, rock excavation or mine of whatsoever kind or character, except coal mines." The Commissioner of Mines was also charged, "as he has opportunity and means," to collect mineral specimens and exhibit the same, to collect books relating to mining and geology, to collect and preserve data regarding mining methods, mining costs, milling, metallurgy, geology, mineral deposits of all kinds, and so on. Aside from the purchase of the Elsner collection of minerals, very little "opportunity and means" has been granted to the Commissioners for anything except inspection work. The present activities of the Bureau of Mines are treated elsewhere in this report.

COMMISSIONERS OF MINES

Harry A. Lee.....	May 11, 1895-May 10, 1903
E. L. White.....	May 10, 1903-May 10, 1907
T. J. Dalzell.....	May 10, 1907-May 10, 1911
T. R. Henahan.....	May 10, 1911-May 10, 1915
Fred Carroll.....	May 10, 1915-June 1, 1919
Horace F. Lunt.....	June 1, 1919-June 1, 1923
John T. Joyce.....	June 1, 1923

PUBLICATIONS OF THE BUREAU OF MINES

BULLETINS

- Bulletin No. 1, Recommendations for Safety Appliances in Mining, Harry A. Lee, Commissioner of Mines, 1896.
- Bulletin No. 2, Precious Metal Production for the year 1898, Harry A. Lee, Commissioner of Mines, 1899.
- Bulletin No. 3, Mining Laws, Relative to Bureau of Mines, Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1899.
- Bulletin No. 4, Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1901.
- Bulletin No. 5, Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1902.
- Bulletin No. 6, Regulations Relative to the Construction, Equipment and Operation of Metalliferous Mines, Mills and Metallurgical Plants, Recommendations and Mineral Production for 1905, E. L. White, Commissioner of Mines, 1906.
- Bulletin No. 7, Federal and State Laws Relating to Mining, Fred Carroll, Commissioner of Mines, 1916.
- Supplement to Bulletin 7, Mining Laws Enacted by the Twenty-first General Assembly, Fred Carroll, Commissioner of Mines, 1917.
- Supplement No. 2 to Bulletin No. 7, Amendments to the Mining Laws Enacted by the Twenty-second General Assembly, Horace F. Lunt, Commissioner of Mines, 1919.
- Supplement No. 3 to Bulletin No. 7, Amendments to Laws Relating to Mining Enacted by the Twenty-third General Assembly, Horace F. Lunt, Commissioner of Mines, 1921.
- Supplement No. 4 to Bulletin 7, Amendments to Laws Relating to Mining Enacted by the Twenty-fourth General Assembly, Horace F. Lunt, Commissioner of Mines, 1923.
- Bulletin No. 8, The Oil Shales of Northwestern Colorado, Horace F. Lunt, Commissioner of Mines, 1919.
- Bulletin No. 9, Mine Safety Standards, Horace F. Lunt, Commissioner of Mines, 1920.

REPORTS

- Report of Bureau of Mines, Colorado, from its establishment in May, 1895, to November 30, 1896, Harry A. Lee, Commissioner of Mines, 1896.
- Report for the Year 1897, Harry A. Lee, Commissioner of Mines, 1898.

- Report for the year 1898, Harry A. Lee, Commissioner of Mines, 1899.
- Biennial Report for the Years 1899-1900, Harry A. Lee, Commissioner of Mines, 1900.
- Biennial Report for the Years 1901-1902, Harry A. Lee, Commissioner of Mines, 1903.
- Biennial Report for the Years 1903-1904, E. L. White, Commissioner of Mines, 1905.
- Biennial Report for the Years 1905-1906, E. L. White, Commissioner of Mines, 1907.
- Biennial Report for the Years 1907-1908, T. J. Dalzell, Commissioner of Mines, 1909.
- Biennial Report for the Years 1909-1910, T. J. Dalzell, Commissioner of Mines, 1911.
- Biennial Report for the Years 1911-1912, T. R. Henahen, Commissioner of Mines, 1913.
- Biennial Report for the Years 1913-1914, T. R. Henahen, Commissioner of Mines, 1914.
- Biennial Report for the Years 1915-1916, Fred Carroll, Commissioner of Mines, 1916.
- Biennial Report for the Years 1917-1918, Fred Carroll, Commissioner of Mines, 1919.
- Annual Report for the Year 1919, Horace F. Lunt, Commissioner of Mines, 1920.
- Annual Report for the Year 1920, Horace F. Lunt, Commissioner of Mines, 1921.
- Annual Report for the Year 1921, Horace F. Lunt, Commissioner of Mines, 1922.
- Annual Report for the Year 1922, Horace F. Lunt, Commissioner of Mines, 1923.
- Annual Report for the Year 1923, John T. Joyce, Commissioner of Mines, 1924.
- Annual Report for the Year 1924, John T. Joyce, Commissioner of Mines, 1925.
- Annual Report for the Year 1926, John T. Joyce, Commissioner of Mines, 1927.

At the time this report goes to press, there are available for distribution copies of the Annual Reports for 1919, 1921, 1923 and 1926, Bulletins 7, 8 and 9. The price of Bulletin 7, with supplements, is 50 cents, all other available publications are free. The supply of publications not mentioned above is exhausted, but copies may be found in many of the public, state and college libraries throughout the country.

Note.—The Colorado Geological Survey, Boulder, Colorado, has published a number of geological reports and maps, a list of which may be obtained from R. D. George, State Geologist, Boulder, Colorado.

TABLE I

PRODUCTION OF THE PRINCIPAL METALS IN COLORADO IN 1926 AND 1927

Compiled from figures by C. W. Henderson, Engineer, U. S. Bureau of Mines. Figures for 1927 are preliminary and subject to correction.

GOLD*				SILVER*				COPPER				LEAD				ZINC				Total Value		Increase or Decrease	County		
1926		1927		1926		1927		1926		1927		1926		1927		1926		1927		1926	1927				
Fine Ounces	Value	Fine Ounces	Value	Fine Ounces	Value	Fine Ounces	Value	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value	Pounds	Value						
Adams	212.03	\$ 4,383	180	\$ 3,721	35	\$ 22	15	2,300	\$ 392	5,000	\$ 650	206,450	\$ 16,516	177,000	\$ 11,983	...	\$ ...	...	\$ ...	\$ 4,405	\$ 3,736	\$—	\$ 669	Adams
Boulder	5,557.17	114,877	4,424	91,452	71,750	44,772	47,089	26,699	364	1,000	130	164,600	13,163	77,000	5,213	237,200	17,790	47,000	2,952	176,557	130,784	—	45,773	Boulder	
Chaffee	153.60	3,173	28	579	5,093	8,178	2,744	1,556	364	2,600	1,556	664,000	53,120	400,000	27,080	105,000	7,875	...	...	37,673	10,430	—	27,243	Chaffee
Clear Creek	4,260.87	88,080	3,706	76,609	272,492	170,035	52,859	29,971	11,715	1,640	42,000	5,460	664,000	53,120	400,000	27,080	105,000	7,875	...	320,750	139,120	—	181,630	Clear Creek	
Custer	2.61	54	...	...	4,255	2,655	341	193	...	...	...	...	936,600	74,928	688,000	46,578	...	...	...	77,637	46,771	—	30,866	Custer
Dolores	188.76	3,902	589	12,176	92,040	57,433	161,639	91,678	107,400	15,036	143,000	18,590	5,834,500	466,760	9,486,000	642,202	5,962,000	447,150	11,213,000	704,176	990,281	1,468,822	+	478,541	Dolores
Douglas	3.00	62	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	62	...	—	62	Douglas
Eagle	528.74	10,930	487	10,067	106,452	66,426	109,163	61,895	105,000	14,700	82,000	10,660	2,609,000	208,720	5,033,000	340,734	7,635,000	572,625	11,914,000	748,199	873,401	1,171,555	+	298,154	Eagle
Elbert	7.16	148	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	148	...	—	148	Elbert
Elgin	2,046.69	42,309	1,147	23,711	88,106	23,778	1,307	741	11,150	1,561	...	242,800	19,424	45,000	3,046	33,000	2,475	...	...	89,547	27,498	—	62,049	Elgin
Gilpin	4.249	165	29,399	18,345	20,000	11,240	9,550	1,337	2,000	260	\$71,000	69,680	726,000	49,150	\$68,000	65,100	463,000	29,390	158,711	93,551	—	65,160	Gilpin
Gunnison	205.55	4,249	165	3,411	29,399	18,345	20,000	11,240	9,550	1,337	2,000	260	\$71,000	69,680	726,000	49,150	\$68,000	65,100	463,000	29,390	158,711	93,551	—	65,160	Gunnison
Hinsdale	58.88	1,217	32	662	4,311	2,690	3,056	1,733	3,350	489	3,000	390	144,300	11,544	140,000	9,478	26,600	1,995	45,000	2,826	17,915	15,089	—	2,826	Hinsdale
Lake	22,720.68	469,078	11,172	230,946	714,585	445,901	391,571	222,021	222,400	31,136	166,000	21,580	18,545,000	1,483,600	13,965,000	945,431	22,324,000	1,674,800	22,862,000	1,435,734	4,104,615	2,855,712	—	1,248,903	Lake
La Plata	313.08	6,472	1,312	27,121	2,681	1,673	10,934	6,200	...	...	...	...	...	...	...	...	...	...	...	8,145	33,821	+	25,176	La Plata
Mineral	32.61	672	59	1,220	551,468	344,116	207,821	117,834	...	...	...	...	354,700	28,376	75,000	5,077	...	...	...	373,164	124,131	—	249,033	Mineral
Moffat	10.93	226	32	662	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	226	662	+	436	Moffat
Montrose	6.38	132	5	103	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	132	103	—	29	Montrose
Ouray	2,121.39	43,853	1,134	23,442	111,181	69,377	70,670	40,070	204,700	28,658	67,000	8,710	612,200	48,976	240,000	18,248	134,000	10,050	88,000	5,526	200,914	93,996	—	106,918	Ouray
Park	1,803.09	37,273	1,616	37,519	7,835	4,889	3,834	2,174	1,750	245	5,000	650	48,500	3,791	56,000	3,880	...	...	...	46,287	44,134	—	2,153	Park
Pitkin	21	434	242,290	161,189	143,588	81,249	3,263,800	261,104	2,355,000	159,434	450,000	33,750	245,000	15,386	446,043	259,503	—	186,540	Pitkin
Rio Grande	5,118.02	105,799	6,200	128,165	88	55	...	...	...	...	...	...	...	...	...	...	...	...	...	105,854	128,165	+	22,311	Rio Grande
Saguache	265.63	5,491	1,014	20,961	289,605	180,651	895,174	507,564	897,285	125,620	3,605,000	463,780	3,085,200	246,816	6,328,000	428,406	265,800	19,935	...	578,513	1,425,711	—	847,198	Saguache	
San Juan	14,308.74	296,788	12,213	252,465	869,963	642,857	700,100	396,957	1,560,400	218,456	1,416,000	184,080	18,460,600	1,476,348	16,682,000	1,129,371	22,423,000	1,681,725	22,836,000	1,434,101	4,215,674	3,396,974	—	818,700	San Juan
San Miguel	65,801.46	1,360,237	46,240	955,866	1,206,277	752,717	889,239	504,199	255,900	36,826	202,000	26,260	9,981,900	798,552	9,496,000	642,879	318,000	23,850	132,000	8,290	2,971,182	2,137,494	—	833,688	San Miguel
Summit	2,080.89	43,016	4,460	92,196	58,707	36,633	49,000	27,783	7,850	1,099	5,000	650	2,962,650	237,012	1,597,000	108,117	4,218,400	316,380	5,024,000	315,507	634,140	—	89,887	Summit	
Teller	214,582.08	4,436,012	162,810	3,365,582	25,609	15,980	27,000	15,309	...	...	...	...	...	...	...	...	...	...	...	4,451,992	3,380,891	—	1,071,101	Teller
Total	342,399.84	\$7,078,033	269,245	\$5,359,070	4,704,122	\$2,935,372	3,792,206	\$2,150,181	3,403,850	\$476,539	5,745,000	\$746,850	68,987,800	\$5,519,024	67,556,000	\$4,574,218	65,000,000	\$4,875,000	74,874,000	\$3,702,087	\$20,883,968	\$17,682,406	\$—	\$3,351,582	
Decrease, 1927	83,154.84	1,718,963	911,916	785,191	1,421,800	944,806	172,913	
Unit prices	...	\$ 20.67	...	\$ 20.67	...	\$ 0.824	...	\$ 0.567	...	\$ 0.14	...	\$ 0.13	...	\$ 0.08	...	\$ 0.0677	...	\$ 0.075	...	\$ 0.0628	

*Includes placer production

PRODUCTION

Gold, Silver, Copper, Lead and Zinc

The production of gold, silver, copper, lead and zinc for 1926 and 1927 is shown in Table 1. The figures for 1926 are final; those for 1927 are preliminary and subject to correction.

The total production of gold, silver, copper, lead and zinc from the mines of Colorado for the calendar year ending December 31, 1927, amounted to \$17,532,406, divided among the various mining counties as shown by the tabulation thereof inserted as Table No. 1 in this report. The seven leading counties in values were, San Juan first, Teller second, Lake third, San Miguel fourth, Dolores fifth, Saguache sixth and Eagle seventh.

In the production of gold the seven leading counties ranked as follows: Teller, San Miguel, San Juan, Lake, Saguache, Summit and Boulder; in silver: Saguache, San Miguel, San Juan, Lake, Mineral, Dolores and Pitkin; copper: Saguache, San Juan, San Miguel, Lake, Mineral, Dolores, Eagle, Ouray; lead: San Juan, Lake, San Miguel, Dolores, Saguache, Eagle and Pitkin; zinc: Lake, San Juan, Eagle, Dolores, Summit, Gunnison and Pitkin.

The gold dredges in Adams, Chaffee, Gilpin, Moffat, Montrose, Park and Summit Counties, the production of which is included in that of the lode mines in Table 1, recovered bullion containing about 4,327 ounces of gold and 1,075 ounces of silver.

Miscellaneous

Plastic clay, fire clay, gypsum, lime, sandstone, fluorspar, bentonite, feldspar and other nonmetallic minerals have been produced to meet local demands. The marble quarries have been quite active.

The Wolf Tongue Mining Company, Tungsten Production Company, Inc., and others produced more than 353 tons of ferberite concentrates last year.

The vanadium plant at Rifle has operated steadily, making an intermediary vanadium product. The Climax Molybdenum Company has been very active all the year.

Acknowledgment

Thanks are due to Scott Turner, director, and C. W. Henderson, engineer, the United States Bureau of Mines, for the production statistics regarding the common metals.

FATAL ACCIDENTS, 1927

Underground

January 28, Harry Vanderwiele, age 21, American, employed as trammer in a mine near Eureka, San Juan County, while walking backwards pulling a loaded mine car, which was moving freely down a 1 per cent grade, was caught between a chute projection and the car and was so severely crushed by the impact that he died from his injuries on the following day—clearly a case of carelessness.

February 5, Joe Stebloy, age 47, and his son, Anthony Stebloy, age 16, Austrians, were instantly killed in a mine in Teller County which they were operating under a lease. They were working in a stope about 60 feet above the working level, when some timbers gave way causing them to fall 25 feet down a chute with a mass of rock and timbers falling on them. Both were dead when found and as there were no witnesses the cause cannot be determined.

February 9, Bert Lansberry, age 46, American, miner, was fatally injured by a fall of rock in a mine near Telluride. Deceased, with his partner, was prying down some loose rock from the hanging wall, when a large slab fell from the roof of the stope, breaking the staging on which they were working, causing both to fall into a chute. Lansberry died the following day. Accident classed as unavoidable.

February 16, King F. Weston, American, age 31, electrician at Moffat Tunnel, was instantly electrocuted at the East Portal while starting a 2300-voltage motor. In some manner the commutator shorted, killing him instantly. Carelessness on his part.

April 1, A. L. La Montague, French, age 30, and J. B. Richards, American, age 32, miners, were instantly killed by falling down a raise in a mine in Park County. They were being hauled up with a piece of 1½-inch iron pipe 20 feet long and a box of powder. When they were about 100 feet up the raise a small sprag on which the sheave block was hung gave way, causing them to fall to the bottom of the raise. They were killed instantly. Carelessness and evident disregard of the standards of safety.

April 13, Marvin Gray, American, age 27, motorman helper, was instantly killed by being hit on the head by a piece of rock from a delayed shot in a mine in San Juan County. Unavoidable.

May 16, J. H. Pike, American, age 31, miner, was instantly killed by a fall of ore from the roof of a stope in a mine in Dolores County. Deceased, with his partner, Mose Unsel, was engaged in drilling a round of machine holes in the roof of the stope, when a large slab of ore fell without warning, killing

Mr. Pike and severely injuring his partner, who stated that in keeping with mine orders they had sounded the roof before drilling and it appeared to be safe. The accident, accordingly, is classed as unavoidable.

May 17, Tom Perrier, Italian, age 36, stope cleaner, was killed by falling down a manway in a mine in San Miguel County. No one saw him fall and it is supposed he was signaling the engineer below to lower the skip and lost his balance and fell about 100 feet. Classed as unavoidable.

May 26, Victor C. Fleetwood, Swede, age 51, machine man, was instantly killed by a fall of rock in a mine in Teller County. Deceased and his partner were engaged in prying down the loose rock after a round of shots in the back of the stope in which they were working. A large quantity of rock fell from the roof, striking Mr. Fleetwood on the head and left shoulder. Classed as unavoidable.

June 16, Ben Bourke, American, age 48, mucker, lost his life in a mine in Boulder County. There was no witness to the accident, but it is quite evident that deceased was pulling down some muck from an old stope that was partly filled with water, which he undermined and caused it to rush down on top of him, covering him completely. He was dead when found. As there were no marks or bruises on his body, other than a slight scratch on the face, it is evident he was smothered.

June 21, John Drebot, supposedly Russian, age 32, machine-man, lost his life when overcome by powder fumes, in a mine in Teller County. After firing a round of several holes in the raise in which they were working, the deceased, against the advice of his partner, returned for his canteen. After waiting for him to return his partner went back and found him crawling on his hands and knees toward the shaft. He was helped to the station and taken directly to the hospital, where he died in about six hours from the effects of the powder fumes. Clearly a case of carelessness on part of deceased.

August 28, Tom Williams, American, age 43, superintendent, was fatally injured while riding on a motor going through the Moffat Tunnel. The drive shaft of the motor dropped to the track, wrecking the motor and throwing him up against the top of the tunnel, breaking several bones and injuring him internally. He died September 3.

September 10, Fred J. Wohleke, American, age 47, mucker, was killed by a fall of rock in a mine in Clear Creek County. He and his partner were mucking out some dirt from the breast of a drift. After picking down all that was supposed to be loose rock from the hanging wall, a slab suddenly fell, striking him on the head and shoulders, killing him instantly. Classed as unavoidable.

September 19, F. M. Myers, American, age 47, miner, while working on a scaffold repairing timbers at the East Portal of the Moffat Tunnel, in some unaccountable way fell, lighting on the back of his neck, causing internal injuries from which he died on the following day. Clearly accidental and classed as unavoidable.

October 12, Fritz Justus Schroeder, American, age 46, miner, was found by his partner dead in the bottom of a winze in a mine in Saguache County, which he was operating under lease. There were no witnesses and the only mark on his body was a bruise on the forehead, which the doctor stated was not sufficient to cause his death. As the deceased was a delicate man it is thought he was overcome by a heart attack causing him to fall down the winze.

October 17, Pete Nadieh, nationality unknown, age 38, mucker, was fatally injured in the Moffat Tunnel. He was standing on one side of the tunnel close to a concrete invert, when the wheels of a truck which was pushed forward by an electric motor, struck a piece of 6x6 timber and raised one end suddenly, which struck him on the left leg, breaking it in several places from ankle to thigh. He died the following day.

November 21, Edmund Reifenrath, American, age 18, mucker and trammer, was instantly killed by falling into an open stope in a mine in Teller County. Deceased was walking through a drift on his way to the station, and while crossing the runway over or near an open stope, in some unaccountable manner fell from the runway into the stope a distance of 150 feet to the bottom. A safe guard rail at this point on the runway would, in all probability, have prevented this accident.

Shaft

February 15, Pat Austin, American, age 36, timberman and driller, was instantly killed by falling down a shaft in a mine in Boulder County. Deceased was riding up the shaft on the bale of the ore bucket, when his hat fell off and in trying to catch it he lost his hold on the cable and fell for a distance of 250 feet.

November 20, Eric Roder, American, age 21, skiptender, was instantly killed in a mine in Summit County. There were no witnesses to the accident, but investigation by the State Mine Inspector and mine officials indicated that the deceased, who had been instructed to bring up his steel from the sixth level to the surface, had placed the same in the skip and boarded the skip to ride to the surface thereon. He gave the usual bell signal, 3-1, meaning to hoist to the surface, and the hoistman started to hoist the skip to the top. When the skip was within a couple of feet of the second level the signal bell rang once, the usual signal to stop, and the hoistman stopped the skip at the second level. Almost immediately this signal was followed by another distinct one-bell ring. The two rings in quick succession being unusual

and confusing, an investigation immediately followed, which resulted in finding the lifeless body of Roder in the sump below the sixth level. He had fallen 580 feet down the steep incline. It seems quite evident according to the inspector's report that Roder, in attempting to make the first ring, lost his balance and fell off the skip and in falling grasped the bell cord, which broke, and this action evidently caused the second ring. Had he given the usual level signal the accident might have been prevented, as the hoistman was hoisting the skip in full accord with the signal given and stopped it at the second level and held it there rather than start it again under the confusion of signals. Every proper precaution was evidently observed.

Surface

January 16, Oscar H. Bennett, American, age 45, tramway carpenter, on a mine 3 miles from Ouray, was thrown from a bucket on which he was riding when it was hit by a runaway bucket. He fell 40 or 50 feet and died January 25. It seems that when the bucket on which Bennett was riding was from 300 to 400 feet down the line from the terminal, a line bucket came into the terminal which was unloaded and was being sent around to the opposite side of the terminal when a stop signal rang. The brakes were applied, which usually stop the buckets, but in this case it seems that the bucket was insecurely fastened and having only a short distance to travel before leaving the terminal on a steep down grade, it got away before the terminal tender could stop it. Evidently the result of some carelessness on the part of the upper terminal attendants.

February 18, Robert Salfisberg, American, age 22, and Chris Ness, Norwegian, age 32, trammers, while clearing a tramway line of snow in San Juan County were caught in a heavy snowslide and carried down the mountain about 100 yards. Both were dead when found. Classed as unavoidable.

May 17, C. E. McKown, American, age 51, while lifting a heavy object at the East Portal Moffat Tunnel was so badly ruptured that he died from the effects on May 29. Classed as unavoidable.

July 9, Charles Collins, American, age 55, blacksmith, was electrocuted at a mine in San Miguel County. There were no witnesses, but from such evidence as the mine inspector was able to gather it is supposed that the deceased was packing some timber by a transformer house which stands on a framework 6 ft. 9 in. from the ground on the lower side, and 2 ft. 10 in. on the upper side. Trails pass on each side and in attempting to change from the lower trail to the upper, he came in contact with a live wire carrying 1,100 volts and was killed instantly. A fence around the transformer would have prevented this accident.

September 19, Joe Salfisberg, American, age 26, tram line-man, was instantly killed in a mine in San Juan County. Deceased, with two or three other men, was removing the blocking beneath a suspended tramway tension station weight box, which weighed about seven tons. He had crawled beneath to remove a piece of timber when a piece of timber to which the chain blocks were attached suddenly broke, letting the weight fall on his head. It seems evident that the men underestimated the strength of the timber to which the chain blocks were attached, and that this accident might have been prevented had they used proper timber.

October 20, Edward McHale, American, age 65, laborer, was burned to death in a bunk-house fire at a mine in San Miguel County. He was told to get out of bed (he was called twice) as the buildings were afire, but for some unknown reason he failed to get up and was overcome by smoke. He perished in the fire and part of his body was found the next day directly under where his bunk had been.

Quarries and Rock Excavation

April 8, Andrew Jensen, Swede, age unknown, craneman on steam shovel on railroad rock excavation in Gunnison County was instantly killed when he fell from the boom of the shovel. Classed as unavoidable.

May 13, George H. Blanton, American, age 21, miner, fatally injured in a clay mine in Jefferson County. He was riding a mine car when the brake broke, causing the car to run away and strike another car which was standing on the track. The impact threw him against the stationary car, causing injuries from which he died the following day. Appears to be carelessness on his own part, as the car was not going at more than 8 or 10 miles an hour and he could have saved himself by jumping.

July 30, Erick R. Olson, American, age 25, contractor, was instantly killed in a clay mine in Douglas County. Deceased was starting to load a truck which had just been backed into the pit, when a large slab of rock fell from the roof, crushing his head against the end of the truck. From our inspection it is evident that the accident was the result of insufficient timbering on the part of the management.

TABLE III

CLASSIFICATION ACCORDING TO CAUSE OF ALL ACCIDENTS IN THE METAL MINING AND QUARRYING INDUSTRY IN THE STATE OF COLORADO DURING THE YEARS 1926 AND 1927.

	(Time lost over 14 days)				Serious Injuries				Slight Injuries (Time lost under 14 days)	
	Fatal		Permanent Total		Permanent Partial Disability		Temporary Disability			
	1926	1927	1926	1927	1926	1927	1926	1927		
UNDERGROUND										
1. Falls of rock or ore from roof or walls.....	11	5	1	..	2	..	71	70	88	63
2. Handling of rock or ore—										
(a) Loading at face.....	..	..	..	..	..	..	3	6	7	8
(b) Loading at chute.....	..	..	..	..	..	..	12	8	16	8
(c) Sledging.....	..	..	..	..	1	..	2	..	8	2
3. Timber or hand tools.....	..	..	..	..	1	..	36	44	49	66
4. Explosives—										
(a) Transportation.....	..	..	..	..	..	..	..	..	..	..
(b) Charging.....	..	..	..	..	..	..	..	..	..	..
(c) Suffocation.....	4	..	..	..	..	..	..	..	..	..
(d) Drilling into old holes.....	1	..	1	2	..	1	3	1	1	1
(e) Striking in loose rock.....	..	..	..	..	..	..	..	2	..	..
(f) Thawing.....	..	..	..	..	..	..	..	..	..	..
(g) Caps, detonators, etc.....	..	..	..	..	..	1	..	2	..	1
(h) Unguarded shots.....	..	..	..	..	..	..	..	..	..	..
(i) Returned too soon.....	..	1	..	..	..	1	1	2	1	..
(j) Premature shot.....	2	..	..	..	1	..	1	3	..	..
(k) Miscellaneous.....	..	1	..	..	..	..	2	..	3	..
5. Haulage—										
(a) Hand and animal.....	..	1	..	..	..	..	31	26	32	32
(b) Mechanical.....	..	2	..	..	..	1	15	15	18	2
6. Persons falling down chute, winze, raise or stope.....	3	8	..	..	..	..	19	16	10	15
7. Run of ore from chute or pocket.....	..	..	..	..	..	..	5	2	7	..
8. Drilling (by machine or hand drills).....	..	..	..	..	..	..	13	15	35	16
9. Electricity—										
(a) Direct contact with trolley wire.....	..	..	..	..	..	..	1	..	..	1
(b) Tool or bar striking trolley wire.....	..	..	..	..	..	..	..	..	..	..
(c) Contact with motor.....	..	1	..	..	..	..	2	1	3	1
(d) Other causes.....	..	..	..	..	..	1	10	17	3	4
10. Machinery other than 5 and 8.....	..	..	..	..	..	..	..	..	..	..
11. Mine fires.....	..	..	..	..	..	..	..	..	..	..
12. Suffocation from natural gases.....	..	..	..	..	..	..	2	..	..	..
13. Inrush of water.....	..	..	..	..	..	..	..	..	..	..
14. Nails and splinters.....	..	..	..	..	..	..	..	..	..	..
	..	..	..	..	..	..	..	5	7	22

[illegible]

SURFACE SHOPS AND PLANTS

[illegible]

CLASSIFICATION ACCORDING TO CAUSE OF ALL ACCIDENTS IN THE METAL MINING AND QUARRYING INDUSTRY IN THE STATE OF COLORADO DURING THE YEARS 1926 AND 1927—Continued.

	Serious Injuries lost over 14 days)				Slight Injuries (Time lost under 14 days)			
	Permanent Total		Partial Disability		Temporary Disability			
	1926	1927	1926	1927	1926	1927	1926	1927
PLACER MINES—DREDGING								
1. Machinery	1	2
2. Electricity
3. Boiler explosions or bursting of steam pipes.....	3	..
4. Falls of persons	2	..
5. Hand tools	4	..
6. Other causes	1	..	4	1
Total	2	..	..	..	1	..	12	5
ORE DRESSING AND MILLING								
1. Haulage system—	2
(a) Cars and motors.....	3	..	..	..
(b) Mechanical conveyors	1	..	..	..	..	..
2. Railway cars and locomotives.....	1	..	..
3. Crushers, rolls or stamps.....	1	1	..
4. Tables, jigs, etc.....
5. Other machinery	6	6	9	5
6. Falls of persons	1	1	3	1
7. Suffocation in ore bins.....	1	2	..
8. Falling objects (rocks, timber, etc.).....	1	..	2	2	3	..
9. Cyanide or other poisoning.....
10. Scalding (steam or water).....	1	..	..	..
11. Electricity	1	..	2	3
12. Hand tools, axes, bars, etc.....	4	2	1	5
13. Nails, splinters, etc.	1	1	1	..
14. Flying pieces of rock from sledgeing or crushing.....	1	..	6	3
15. Other causes	1	2	6	..
Total	2	..	23	15	31	25
SMELTER								
16. Haulage system—
(a) Cars and motors.....	1	2	1	1
(b) Mechanical conveyors	1	2	..
(c) Hand and animal.....

[illegible]

CLASSIFICATION ACCORDING TO CAUSE OF ALL ACCIDENTS IN THE METAL MINING AND QUARRYING INDUSTRY IN THE STATE OF COLORADO DURING THE YEARS 1926 AND 1927—Continued.

	Fatal				(Time lost over 14 days)				Serious Injuries				Slight Injuries	
	1926		1927		Total		Permanent Disability		Partial Disability		Temporary Disability		(Time lost under 14 days)	
	1926	1927	1926	1927	1926	1927	1926	1927	1926	1927	1926	1927	1926	1927
IN AND ABOUT QUARRY—Continued														
5. Haulage—														
(a) Hand and animal.....	3	2	7	4
(b) Mechanical.....	1	..	1	..	2	..
6. Falling into quarry from surface, benches or face.....	1	2	1
7. Falling from hoist, derricks, ladders, etc.....
8. Drilling and channeling (by machine or hand).....	1	1	4	3
9. Electricity (shock or burns).....	1	..
10. Machinery—														
(a) Cables and attachments.....
(b) Guys, masts, booms and attachments.....
(c) Pumps and hoisting engines.....
11. Flying pieces of rock from sledging.....	1	2	4	3
12. Nails, splinters, etc.....	1	..	3	4
13. Boiler and air tank explosions.....
14. Animals.....	6	11	6
15. Other causes.....	4	..	..
Total.....	2	1	..	..	..	..	1	..	..	..	49	33	83	54
OUTSIDE WORKS														
16. Haulage—														
(a) Hand and animal.....	1	1	2	3
(b) Mechanical.....	..	1	..	..	..	..	..	..	..	..	1	1	..	1
17. Railway cars and locomotives.....
18. Crushers.....	1	..
19. Cranes, derricks, etc.....	2	..	2	2
20. Other machinery.....	1	..	..	..	..	..	1	..	..	..	5	2	11	5
21. Falls of persons.....	..	1	..	..	..	..	..	..	..	..	9	7	15	10
22. Hand tools.....	1	3	11	14
23. Electricity.....	1	1
24. Nails, splinters, etc.....	10	1
25. Flying pieces of rock from sledging or crushing.....	1	1	5	..
26. Flying or falling objects (rock, timbers, etc.).....	12	10	33	28
27. Burns.....	2	4	8	5
28. Other causes.....	2	4	20	15
Total.....	1	2	..	..	..	..	1	..	..	..	37	33	119	85

TABLE IV

CLASSIFICATION ACCORDING TO CAUSE AND OCCUPATION OF THE FATAL ACCIDENTS THAT OCCURRED IN THE METAL MINING AND QUARRYING INDUSTRY OF COLORADO IN THE YEARS 1926 AND 1927.

MINES														
Superintend- ents, Fore- men and Engineers 1926 1927	Machine Men and Helpers 1926 1927		Miners 1926 1927		Loaders, Shovelers Muckers and Trammers 1926 1927		Trackmen, Pipemen, Pumpmen and Com- pressormen 1926 1927		Cage Tenders and Station Cagers 1926 1927		Carpenters, Timber- men and Helpers 1926 1927		Elec- tricians, Motor- men and Helpers 1926 1927	
	1926	1927	1926	1927	1926	1927	1926	1927	1926	1927	1926	1927	1926	1927
UNDERGROUND														
1.	Falls of rock or ore from roof or wall	1	1	3	2	2	2	2	..	..	..	4	..	..
2.	Handling rock or ore .....	..	..	..	..	..	..	..	..	..	..	..	..	..
3.	Timber or hand tools .....	..	..	..	..	..	..	..	..	..	..	..	..	..
4.	Explosives .....	..	1	3	..	1	..	..	..	..	..	1	..	2
5.	Haulage	1	..	..	..	..	3	..	..	..	..	..	..	..
6.	Persons falling down chute, winze, raise or stope.....	..	..	2	6	..	..	..	..	..	..	1	1	..
7.	Run of ore from chute or pocket .....	..	..	..	..	..	..	..	..	..	..	..	..	..
8.	Drilling (by machine or hand drills) .....	..	..	..	..	..	..	..	..	..	..	..	..	..
9.	Electricity .....	..	..	..	..	..	..	..	..	..	..	..	..	..
10.	Machinery other than 5 or 8 .....	..	..	..	..	..	..	..	..	..	..	..	..	1
11.	Nine fires .....	..	..	..	..	..	..	..	..	..	..	..	..	..
12.	Suffocation from natural gases .....	..	..	..	..	..	..	..	..	..	..	..	..	..
13.	Inrush of water .....	..	..	..	..	..	..	..	..	..	..	..	..	..
14.	Nails and splinters .....	..	..	..	..	..	..	..	..	..	..	..	..	..
15.	Other causes .....	..	..	..	..	..	..	..	..	..	..	..	..	1
	Total	1	2	8	8	3	5	..	..	..	5	1	3	2
SHAFTS														
16.	Falling down shaft	1	..	1	..	..	..	..	..	1	..	1	..	..
17.	Objects falling down shaft .....	..	..	..	..	..	..	..	1	..	..	..	..	..
18.	Breaking of cables .....	..	..	..	..	..	..	..	..	..	..	..	..	..
19.	Overwinding .....	..	..	..	..	..	..	..	..	..	..	..	..	..
20.	Cage, skip or bucket	1	..	..	..	..	..	..	..	..	..	..	..	..
21.	Other causes .....	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	2	..	1	..	..	..	..	1	1	..	1	..	..

CLASSIFICATION ACCORDING TO CAUSE AND OCCUPATION OF THE FATAL ACCIDENTS THAT
OCCURRED IN THE METAL MINING AND QUARRYING INDUSTRY OF COLORADO IN THE
YEARS 1926 AND 1927—Continued.

SURFACE ACCIDENTS

	SHAFTS—Continued		Superintendent- Foremen		Engineers Firemen and Hoistmen		Blacksmiths and Mechanics		Carpenters and Topmen		Elec- tricians		Others	
	1926	1927	1926	1927	1926	1927	1926	1927	1926	1927	1926	1927	1926	1927
22. Haulage
23. Railway cars and locomotives.....
24. Run or fall of ore in or from ore bins.....	1	..
25. Falls of persons.....	1	..	..	..	..	..
26. Nails and splinters.....
27. Hand tools, axes, bars, etc.....
28. Electricity	1	..	..	..	..	..	..
29. Machinery
30. Other causes	1	2
Total	1	1	1	..	..	..	2	2
MILLS														
	Superintendent- Foremen		Grinding Machinery Men and Millmen		Concen- trator Men		Laborers		Carpenters and Mechanics		Aerial Tram Men and Conveyor Men			
	1926	1927	1926	1927	1926	1927	1926	1927	1926	1927	1926	1927	1926	1927
1. Haulage system	1
2. Railway cars and locomotives.....
3. Crushers, rollers or stamps.....
4. Tables, jigs, etc.....
5. Other machinery
6. Falls of persons.....	1
7. Suffocation in ore bins.....
8. Falling objects (rocks, timbers, etc.).....	2
9. Cyanide or other poisoning.....
10. Scalding (steam or water).....
11. Electricity
12. Hand tools, axes, bars, etc.....
13. Nails, splinters, etc.....
14. Flying pieces of rock from sledge or crushing.....
15. Other causes
Total	4

SMELTERS

	Superintendent- Foremen 1926 1927	Laborers 1926 1927	Motormen and Switchmen 1926 1927	Feeders and Furnace Men and Charge Wheels 1926 1927
1. Haulage system
2. Railway cars and locomotives
3. Cranes
4. Other machinery	1	1	..
5. Falls of persons
6. Suffocation in ore bins
7. Flying or falling objects
8. Gas (burns or asphyxiation)
9. Scalding (steam or water)
10. Electricity
11. Hand tools, axes, bars, etc.
12. Nails, splinters, etc.
13. Burns from matte, slag or molten metal (pouring or spilling)
14. Hot metal explosions
15. Other causes
Total	—	1	1	..

QUARRIES, CLAY PITS, OIL SHALE MINES AND ROCK EXCAVATIONS

	Superintendent- Foremen 1926 1927	Teamsters 1926 1927	Drillmen 1926 1927	Laborers 1926 1927
1. Haulage .....	..	..	..	..
2. Machinery .....	..	..	..	1
3. Other causes	1	..	..	2
Total	1	..	..	3

	Miners 1926 1927	Dredgemen 1926 1927	Laborers 1926 1927
1. Machinery
2. Electricity
3. Other causes
Total	—

PLACERS AND DREDGES

	Miners 1926 1927	Dredgemen 1926 1927	Laborers 1926 1927
1. Machinery
2. Electricity
3. Other causes
Total	—

OPERATING MINES IN BOULDER COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Barron (m)	Salina	Garfield Charles	137 So. La Salle St., Chicago, Illinois	Gold, Silver, Lead
Belleville	Rowena	H. D. Nordstrom	Jamestown	Gold, Silver, Lead
Buckeye (a)	Boulder	Walter N. Ramsey	Box 375, Boulder	Gold, Silver, Lead
Buckhorn	Jamestown	Dunall Mining and Milling Corp.	422 Midland Savings Bldg., Denver	Gold, Silver
Bueno (m)	Jamestown	Colorado Consolidated and Milling Company	928 Equitable Bldg., Denver	Gold
Caribou	Nederland	American Mines and Smelting Co.	Sullivan Bldg., Boulder	Gold, Silver, Lead, Zinc
Clipper	Crisman	Rock Springs Mining and Leasing Company	Rock Springs, Wyoming	Gold, Silver (c)
Cold Spring (m)	Nederland	Wolf Tongue Mining Company	Boulder	Tungsten
Concord Group (m)	Wallstreet	Metals Production Company	19 Citizens National Bank Bldg., Boulder	Gold, Silver
Dorothy (m)	Boulder	George W. Teal	Box 463, Boulder	Tungsten
East Side	Eldora	Sullivan Brothers	Eldora	Gold, Silver (c)
Emancipation	Salina	Emancipation Gold Mining Co.	Alpine Hotel, Boulder	(c)
Eureka	Boulder	Tungsten Production Company, Inc.	Sullivan Bldg., Boulder	Tungsten
Fairview (m)	Nederland	Fairview Mining Corporation	225 First National Bank Bldg., Denver	Gold, Silver, Lead
Five Brothers	Crisman	New Era Mining Company	Sullivan Bldg., Boulder	Gold, Silver
Fluorspar (m)	Jamestown	E. W. Lehman	Jamestown	Gold, Silver
Franklin	Wallstreet	George Bailey	Wallstreet	Fluorspar
Gladys	Wallstreet	Gold Bond Development Co.	216 Chamber of Commerce, Denver	Gold, Silver
Grace	Jamestown	Alfred Jones	Jamestown	Gold, Silver (c)
Grand Republic	Crisman	New Era Mining Company	Sullivan Bldg., Boulder	Gold, Silver
Great Britain	Wallstreet	Evans Mining and Reduction Co.	Cooper Bldg., Denver	Gold, Silver
Grey Copper (a)	Wallstreet	William Mitchell	Wallstreet	Gold, Silver
Good Friday (m)	Sugar Loaf	Clipper Tungsten Company	307 First National Bank Bldg., Boulder	Tungsten
Happy Thought	Gold Hill	Happy Thought Mining Co.	Lyons, Colorado	Gold
Interocean, etc.	Sunshine	John W. Kirkbride	7 Citizens National Bank Bldg., Boulder	Gold, Silver
Iron (a)	Crisman	W. T. Lynch	627 Walnut St., Boulder	Gold, Silver
Jake Witter	Crisman	Jake Witter	2923 Inca St., Denver	Gold, Silver
Little Julie (a)	Crisman	Little Julie Mining Company	2087 So. High St., Denver	Gold, Silver (c)
Lucky 2	Boulder	Tungsten Production Company	Sullivan Bldg., Boulder	Tungsten
Mt. Lion	Magnolia	J. L. McDonald	Magnolia	Gold, Silver
Nancy (m)	Boulder	Metals Production Company	19 Citizens National Bank Bldg., Boulder	Gold, Silver

O. and M. (a)	Crisman	H. E. Baker	3519 Newton St., Denver	Gold, Silver
Philadelphia Lode	Nederland	Ferberite Tungsten Mines, Inc.	Nederland	Tungsten
Poorman	Magnolia	Thad White and Company	1622-18th St., Boulder	Gold
Potosi (m)	Nederland	Potosi-Carlou Mining Co.	Suite 901, 160 Broadway, New York, N. Y.	Lead
Richmond	Salina	James Bartlett and Co.	631 University Ave., Boulder	Gold, Silver
Roseberry	Eldora	Roseberry Mining and Milling Co.	226 So. Williams St., Denver	Gold, Silver (c)
Salina	Salina	P. J. Mix, Agent	Box 35, Boulder	Gold, Silver (c)
Vasco (m)	Boulder	Tungsten Production Company, Inc.	Sullivan Bldg., Boulder	Gold, Silver
Wood Mountain	Wallstreet	Wood Mountain Mines Co.	2605 W. Travis St., San Antonio, Texas	Gold, Silver
Yellow Jacket (a)	Boulder	Mountain Plains Companies, Inc.	Sullivan Bldg., Boulder	(c)
		C. H. Craig	Copper Rock, via Boulder	

OPERATING MINES IN CHAFFEE COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Madonna (a)	Monarch	Etna Lead and Zinc Corp.	185 Devonshire St., Boston, Mass.	Silver, Lead, Zinc

OPERATING MINES IN CLEAR CREEK COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Almaden (a)	Idaho Springs	Neil and Phillips	Idaho Springs	Gold, Silver
Antelope (a)	Silver Plume	T. Abbott Nile and Astley Atkins	Silver Plume	Gold, Silver, Lead, Zinc
Argo Tunnel	Idaho Springs	Quartz Hill Holding Co.	Idaho Springs	(c)
Atlas-Manchester (a)	Georgetown	Dean and Martin	50 Congress St., Boston, Mass.	(c)
Baltimore (Fenton) (a)	Silver Plume	Fenton Syndicate	Silver Plume	Zinc
Bellevue-Hudson (m)	Empire	Bellevue-Hudson Mining Co.	523 Colorado Bldg., Denver	Gold, Silver, Lead
Breadwinner (a)	Idaho Springs	W. S. Humphrey	Idaho Springs	Gold, Silver, Lead (c)
Capital Tunnel (a)	Georgetown	Georgetown Tunnel and Transportation Co.	Georgetown	Gold, Silver, Lead, Copper
Collins Group	Silver Plume	H. G. Lamore	Silver Plume	Silver, Lead
Colomin	Freeland	Douglas Mountain Mining Co.	Idaho Springs	Gold, Silver, Cop- per (c)
Crazy Girl	Freeland	Silver Leaf Metals, Inc.	614 Ideal Bldg., Denver	Gold, Silver, Lead, Copper, Zinc
Cyclone (a)	Silver Plume	Joseph Cottingham	Silver Plume	Silver
(a) Operated for part of the year only		(c) No production in 1927	(m) Mill operated in connection with mine	

OPERATING MINES IN CLEAR CREEK COUNTY, 1927—Continued

Name	Location	Operator	Address	Character of Products
DeCaprivi	Lawson	DeCaprivi Mining Company	Lawson	Gold, Silver, Lead, Zinc
Denver Tunnel	Lawson	Metals Tunnel Company	2555 West 37th Ave., Denver	Gold, Silver, Lead (c)
East Butte (a)	Silver Plume	Williams and May	Silver Plume	Gold, Silver, Lead, Zinc
Edgar, Bald Eagle	Idaho Springs	North American Mining Co.	405 Interstate Trust Bldg., Denver	Gold, Silver, Lead, Copper
Elliott-Barber	Idaho Springs	A. L. Kemp and Company	Idaho Springs	Gold, Silver, Lead, Copper
Fulton	Idaho Springs	Fulton Leasing Co.	Interstate Trust Bldg., Denver	Gold, Silver, Lead, Copper
Georgetown Tunnel (m)	Georgetown	Georgetown Tunnel Transport Co.	Georgetown	Gold, Silver, Lead, Zinc
German (a)	Idaho Springs	Christian Stangier	Idaho Springs	Gold, Silver, Lead (c)
Gold Belt Tunnel (a)	Silver Plume	Chasfield Mining Co.	Silver Plume	Silver, Lead, Zinc
Gold Dirt (m)	Empire	Gold Dirt Mining Company	902 Security Bldg., Denver	Gold, Silver, Copper
Gold Medal	Idaho Springs	Gold Medal Mining Co.	Idaho Springs	Gold, Silver, Lead (c)
Gold Valley	Lawson	Columbian Mt. Mining and Sub-leasing Co.	319 Broadway, Denver	Gold, Silver, Lead (c)
Golden Glen Group	Idaho Springs	Golden Glen Mfg. Milling and Tunnel Co.	Idaho Springs	Gold, Silver, Lead (c)
Grand-Clear Creek (a)	Empire	Wahlstrom, Anderson	Empire	Gold, Silver, Lead (c)
Hamil Tunnel (a)	Silver Plume	Ed Chamberlain and Assoc.	2652 Clermont St., Denver	Gold, Silver (c)
Hidden Diamond (a)	Idaho Springs	L. J. Burch	Idaho Springs	Gold, Silver, Lead, Copper, Zinc
Hyland	Idaho Springs	Spanish Bar Mining Co.	522 Colorado Bldg., Denver	Gold, Silver, Lead, Copper, Zinc (c)
Iron King Group	Empire	Edward Carlson	Empire	Gold, Silver, Lead, Copper, Zinc (c)
Jo Reynolds	Lawson	Jo Reynolds M. M. D. T. and T. Co.	701 Equitable Bldg., Denver	Gold, Silver, Lead, Zinc, Uranium (c)
J. J. Kennedy (a)	Freeland	J. J. Kennedy	Box 283, Idaho Springs	Gold, Silver, Lead, Copper, Zinc
Kelly Tunnel (a)	Georgetown	Boston Mining and Milling Co.	Georgetown	Gold, Silver, Lead, Zinc

Kelso	.....Silver Plume	.....Kelso Nat. Mining Co.	.....Georgetown	.....Gold, Silver, Lead Zinc
Kemp Mill (a)	.....Idaho Springs	.....A. L. Kemp and Arthur Dunas	.....Idaho Springs	.....Gold, Silver, Cop- per (c)
Lake (a)	.....Idaho Springs	.....Lake Mining Company	.....617 Majestic Bldg., Denver	.....Gold, Silver, Lead, Copper (c)
Legal Tender (a)	.....Dumont	.....Andy Lowe Gold Mining Co.	.....Box 486, Idaho Springs	.....Gold, Silver, Lead, Copper (c)
Lexington	.....Idaho Springs	.....Lexington Cons. Mines Co.	.....Idaho Springs	.....Gold, Silver Lead
Little Harry (a)	.....Idaho Springs	.....Mrs. Bertha B. Greenfell and Assoc.	.....2963 Yates St., Denver	.....Gold, Silver, Lead, Copper, Zinc (c)
Little Joe Group (a)	.....Idaho Springs	.....J. W. Austin	.....Idaho Springs	.....Gold, Silver, Lead, Copper
Lombard	.....Idaho Springs	.....Fall River Mining Company	.....718 Symes Bldg., Denver	.....Gold, Silver, Lead, Copper
Lone Tree and New Era (m)	.....Freeland	.....Lone Tree Mines, Inc.	.....621 Empire Bldg., Denver	.....Gold, Silver, Lead
Mammoth (m)	.....Silver Plume	.....Silver Plume Silver Mining Co.	.....4775 E. 6th Ave., Denver	.....Gold, Silver, Lead
Mattie Jack (a)	.....Dumont	.....New Day Mines, Inc.	.....331-14th St., Denver	.....Gold, Silver, Lead, Zinc (c)
Maud Monroe	.....Idaho Springs	.....Lewis Fhader	.....4844 W. 30th Ave., Denver	.....Gold, Silver, Lead, Copper, Zinc
Maud S.	.....Empire	.....Douglas Mountain Mining Co.	.....Idaho Springs	.....Gold, Silver, Lead
May Day	.....Idaho Springs	.....Silver Leaf Metals, Inc.	.....Idaho Springs	.....Gold, Silver, Lead
Mendota (m)	.....Silver Plume	.....Wasatch Colorado Mining Co.	.....Chicago, Ill.	.....Gold, Silver, Lead, Zinc
Mineral Chief (a)	.....Georgetown	.....Mineral Chief Option	.....First National Bank, Denver	.....Gold, Silver, Lead, Zinc (c)
Neglected	.....Freeland	.....Harry W. Robinson	.....621 Foster Bldg., Denver	.....Gold, Silver, Lead, Copper, Zinc
Newton Mill and Gem Mine	.....Idaho Springs	.....William E. Renshaw	.....Idaho Springs	.....Gold, Silver, Lead, Copper, Zinc (c)
Nimrod (a)	.....Grant	.....Freund and Hunter	.....Cassells	.....Gold, Silver, Lead, Zinc (c)
O. S. Storrs	.....Empire	.....John A. Helm and Co.	.....Empire	.....Gold, Silver, Lead, Zinc (c)
Onelda	.....Freeland	.....W. D. McCutcheon and Co.	.....Idaho Springs	.....Gold
P. T.	.....Idaho Springs	.....Burkhardt Mining Co.	.....1515 Lawrence St., Denver	.....Gold
Pelican	.....Silver Plume	.....Wm. Mierendorf and Co.	.....Silver Plume	.....Gold, Silver, Lead, Zinc
Platts, Big Chance	.....Lawson	.....Charles Lawson and Co.	.....Lawson	.....Gold, Silver, Cop- per, Lead, Zinc (c)
Poorman	.....Freeland	.....R. W. Mackenzie	.....Idaho Springs	.....Gold, Silver, Lead
Queen Elizabeth (a)	.....Idaho Springs	.....Frank J. Hayes Mining Co.	.....Box 1835, Denver	.....Gold, Silver, Lead, Zinc
Red Elephant	.....Lawson	.....Red Elephant Mining Co.	.....Lawson	.....Gold, Silver, Lead, Zinc
Santiago	.....Georgetown	.....Fast Argentine Development Co.	.....302 Continental Trust Bldg., Denver	.....Gold, Silver, Lead, Copper (c)
(a) Operated for part of the year only		(c) No production in 1927	(m) Mill operated in connection with mine	

OPERATING MINES IN CLEAR CREEK COUNTY, 1927—Continued

Name	Location	Operator	Address	Character of Products
Sidney Tunnel (a)	Georgetown	M. Sidney, Trustee	Georgetown	Gold, Silver, Lead, Zinc (c)
Silver Queen (a)	Grand	John A. Kimberley and J. L. Henrietz	Cassels	Gold, Silver, Lead, Copper (c)
Summit Group	Empire	Beaman and Collyer	3602 Alcott St., Denver	Gold (c)
Tolland County Tunnel	Idaho Springs	Actna Leasing Company	Idaho Springs	Gold (c)
Travis Gulch	Rollinsville	Virginia Mining Co.	212 Denver Theatre Bldg., Denver	Gold, Silver, Copper (c)
Treasure Vault	Idaho Springs	A. V. Thorp	Box 233, Idaho Springs	Silver
Two Brothers	Idaho Springs	Jessica Mining Company	Idaho Springs	Gold, Silver, Lead, Copper
West Gold	Idaho Springs	West Gold Mining Company	502 Denham Bldg., Denver	Gold, Silver
West Fork	Empire	West Fork Consolidated Mines Co.	Empire	Gold, Silver, Lead, Copper, Zinc
Wilson Mines (a)	Empire	Mrs. A. C. Wilson	Empire	Gold, Silver, Lead, Copper, Zinc
Yukon Group (m)	Alice	Caddo Mining and Milling Co.	Alice	Gold, Silver

OPERATING MINES IN CUSTER COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Cloverdale (a)	Hillside	Cloverdale Mines Company, Inc.	Hillside	Gold (c)
New Hope (a)	Westcliffe	Phenix Lead-Silver Co.	Canon City	(c)
Passiflora (a)	Westcliffe	Westcliffe Development Trust	Westcliffe	Lead, Silver (c)
Pocahontas, Humboldt, Jumper, S. A. K.	Rosita and Westcliffe	Pocahontas-Humboldt Mining, Leasing and Milling Co.	Rosita	(c)
Powhattan (a)	Westcliffe	Hendershot and Beardsley	Silver Cliff	Gold, Silver, Copper (c)
Prairie Dog (a)	Westcliffe	Steel Galena Mines Co.	Suite 305, Greeley National Bank Bldg., Greeley	Silver, Lead (c)
Terrible (m)	Ilse	R. D. Webb	Ilse	Lead

OPERATING MINES IN DOLORES COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Argentine Shaft	Rico			
		St. Louis Smelting and Refining Co.	722 International Life Bldg., St. Louis, Mo.	Gold, Silver, Lead, Copper, Zinc

Argentine Tunnel	Rico	Rico Argentine Mining Company	539 Atlas Block, Salt Lake City, Utah	Gold, Silver, Lead, Copper, Zinc
Blaine Tunnel	Rico	Rico Argentine Mining Company	539 Atlas Block, Salt Lake City, Utah	Gold, Silver, Lead, Copper, Zinc
Buckhorn (a)	Rico	Union Carbonate Mines, Inc.	551 Equitable Bldg., Denver	Gold, Silver, Lead, Copper, Zinc
Emma (a)	Dunton	Emma Development Company	Dunton	Gold, Silver, Lead, Copper, Zinc (c)
Falcon	Rico	Falcon Lead Mining Company	Rico	Gold, Silver, Lead, Copper, Zinc
Log Cabin Tunnel	Rico	Rico Argentine Mining Company	539 Atlas Block, Salt Lake City, Utah	Gold, Silver, Lead, Copper, Zinc
Mountain Spring, Pigeon, Wellington	Rico	St. Louis Smelting and Refining Co.	722 International Life Bldg., St. Louis, Missouri	Gold, Silver, Lead, Copper, Zinc
Revenue Tunnel	Rico	Rico-Enterprise Mining Company	Rico	Gold, Silver, Lead, Copper, Zinc
Rico-Ventura	Rico	Rico-Ventura Mining Company	Rico	Gold, Silver, Lead, Copper, Zinc
Shamrock	Rico	Pelleyre Mining and Milling Co.	818 Kearns Bldg., Salt Lake City, Utah	Gold, Silver, Lead, Copper, Zinc
Silver Swan	Rico	St. Louis Smelting and Refining Co.	722 International Life Bldg., St. Louis, Missouri	Gold, Silver, Lead, Copper, Zinc
Smuggler-Almont (m)	Dunton	Mount Pleasant Mining Co.	% Fillius, Fillius and Winters, Denver	Gold, Silver, Lead, Copper, Zinc
Union Carbonate	Rico	Union Carbonate Mines, Inc.	551 Equitable Bldg., Denver	Gold, Silver, Lead, Zinc

OPERATING MINES IN DOUGLAS COUNTY, 1927

Name	Location	Operator	Address	Character of Products
American-Rand (a)	Parker	American Rand Mining and Milling Co.	Glenaire Apartments, 1431 Glenarm Place, Denver	Gold (c)
(a) Operated for part of the year only		(c) No production in 1927	(m) Mill operated in connection with mine	

OPERATING MINES IN EAGLE COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Eagle	.....Gilman	.....Empire Zinc Company	.....Canon City	.....Gold, Silver, Cop- per
Golden Heart, etc. (a)	.....Minturn	.....Cross Creek Mining and Milling Co., Inc.	.....475 Elliott Square, Buffalo, New York	.....(c)

OPERATING MINES IN FREMONT COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Gumaer	.....Cotopaxi	.....David Heaton	.....230 Steel Bldg., Denver	.....Gold, Silver, Lead, Copper, Zinc

OPERATING MINES IN GARFIELD COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Blue Jay and Deer (a)	.....Newcastle	.....Tony Bartolotti	.....Newcastle	.....Vanadium (c)
Continental	.....Rifle	.....Continental Vanadium Company	.....Denham Bldg., Denver	.....Vanadium
Eastern Star	.....Rifle	.....Rousseau and Lacy	.....Rifle	.....Silver, Lead, Zinc
Pay Day	.....Rifle	.....Pay Day Mining Company	.....Rifle	.....Vanadium
U. S. Vanadium (m)	.....Rifle	.....United States Vanadium Corp.	.....30 East 42nd St., New York, N. Y.	.....Vanadium

OPERATING MINES IN GILPIN COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Arizona and Morning Star	.....Russell Gulch	.....Gold Palace Mines Company	.....202 Patterson Bldg., Denver	.....Gold, Silver, Lead, Copper
Atlantic (a)	.....Hughesville	.....Hawkeye Mining Company	.....618 Downing St., Denver	.....Gold, Silver, Lead, Zinc
Barnes Group	.....Central City	.....Barnes-Lake Gold Mining Co.	.....Central City	.....Gold, Silver
Beacon Group	.....Rollinsville	.....Beacon Mining Company	.....1641 Stout St., Denver	.....Gold, Silver, Cop- per
Big Six (a)	.....Russell Gulch	.....John Kavas	.....1717 Larimer St., Denver	.....Gold, Silver, Lead, Copper, Zinc (c)
Bullion (a)	.....Central City	.....Bullion Mining Company	.....Central City	.....Gold, Silver, Lead, Zinc

Burroughs	Nevadaville	Sparks and Thorne	Idaho Springs	Gold, Silver, Copper
Centennial	Russell Gulch	John Griffin	Russell Gulch	Gold, Silver
Chaffee Group	Blackhawk	H. E. Woodward	580 Franklin St., Denver	Gold, Silver, Lead, Copper, Zinc
Cliff Extension (a)	Central City	Macon and Company	Gas and Elec. Bldg., Denver	Gold, Silver, Lead
Columbia (a)	Nevadaville	W. E. Gomer	Blackhawk	Gold, Silver, Lead
Concrete	Central City	Concrete Group of Mines, Inc.	Idaho Springs	Gold, Silver, Lead
Congress	Hughesville	B. F. Howell	Central City	Silver, Lead (c)
Dumas	Blackhawk	Dumas Mining Company	Blackhawk	Gold, Silver, Lead, Copper, Zinc
Eagle Group (a)	Rollinsville	Oneida Mining Co.	Rollinsville	Gold, Silver, Copper (c)
Foot and Simmons Branch				
Lode	Blackhawk	Balbach Leasing Company	Blackhawk	Gold, Silver, Lead, Copper
Gilpin Eureka (m)	Central City	Peter Westman Co.	Blackhawk	Gold, Silver, Lead, Copper
Gunnell	Nevadaville	Sparks and Thorne	Idaho Springs	Gold, Silver, Copper
Jennie Blanchè	Blackhawk	K. E. Seaman and Company	526 Exchange Bldg., Denver	Gold, Silver, Lead
Kansas	Nevadaville	Quartz Hill Holding Co.	Idaho Springs	Gold, Silver, Copper
La Framas (a)	Central City	La Framas Mining Company	Box 122, Central City	Gold, Silver, Lead
Lotta (a)	Central City	Premium Gold Mining Company	2141 So. Sherman St., Denver	Gold, Silver, Lead, Copper (c)
Lucky Two	Blackhawk	A. J. Gray and Son	Blackhawk	Gold, Silver, Lead, Zinc
Marquette	Blackhawk	Marquette Mining Company	406 Mining Exchange Bldg., Denver	Gold, Silver, Lead, Zinc (c)
Mary Goldfield	Russell Gulch	Robert F. Mackey and Emil Rasch	Rollinsville	Gold, Silver, Lead, Zinc (c)
Nashville	Russell Gulch	Ed. Chamberlain	2652 Clermont St., Denver	Gold, Silver, Lead, Copper (c)
Pennsylvania	Central City	Elmer C. Hartmen	Central City	Gold, Silver, Lead
Perrin	Russell Gulch	Consolidated Metals, Inc.	Exchange Bldg., Denver	Gold, Silver, Lead, Copper
Pewabic	Russell Gulch	Pewabic Mining and Milling Co.	1735 Stout St., Denver	Gold, Silver, Copper
Philadelphia	Blackhawk	C. J. Nordlien	Blackhawk	Gold, Silver, Lead
Poinsettia (a)	Rollinsville	Oneida Mining Co.	Rollinsville	Gold, Silver, Copper
Quartz Hill Tunnel	Central City	Delmonico Development Co.	Central City	Gold, Silver, Copper
Rex	Rollinsville	Rex Developing Company	Rollinsville	Gold, Silver, Copper
(a) Operated for part of the year only		(c) No production in 1927	(m) Mill operated in connection with mine	

OPERATING MINES IN GILPIN COUNTY, 1927—Continued

Name	Location	Operator	Address	Character of Products
San Juan Group	Nevadaville	Chain O Mines	825 University Place, Evanston, Ill.	Gold, Silver (c)
Shiller	Central City	James Daly	East Portal, Colo.	Gold, Silver (c)
Silver Star	Blackhawk	Pyramid Metal Corp. and Silver Star Syndicate Co.	Blackhawk	Gold, Silver, Lead
Smuggler (m)	Rollinsville	New Life Mining and Milling Corp.	411 Hospital Trust Bldg., Providence, R. I.	Gold, Silver, Cop- per
Snowden	Blackhawk	Central States Mining Co., A. J. Hershendorfer	Quincy, Illinois	Gold, Silver
Sunflower	Central City	J. W. Baldwin	Central City	(c)
Two Forty	Russell Gulch	Consolidated Metals, Inc.	Exchange Bldg., Denver	Gold, Silver, Lead, Copper

OPERATING TUNNELS IN GILPIN COUNTY, 1927

Name	Location	Operator	Address
Moffat Tunnel	East Portal	Hitchcock and Tinkler, Inc.	1731 Arapahoe St., Denver

OPERATING TUNNELS IN GRAND COUNTY, 1927

Name	Location	Operator	Address
Moffat Tunnel	West Portal	Hitchcock and Tinkler, Inc.	1731 Arapahoe St., Denver

OPERATING MINES IN GRAND COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Elk Mountain	Kremmling	Elk Mountain Copper Company	Hot Sulphur Springs, Colorado	Gold, Silver, Lead, Copper, Zinc
Minnesota	Fraser	George D. Parks and Company	Sallma, Colorado	
Mt. Vasquez	Fraser	Mt. Vasquez Mines Company	404 Foster Bldg., Denver	
Ready Cash (a)	Empire	Helping Hand Mining and Development Co.	264 So. Washington St., Denver	

OPERATING MINES IN GUNNISON COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Akron	Whitepine	Akron Mines	1410 Grant St., Denver	Gold, Silver, Lead, Zinc
Carter	Ohlo City	Carter Mines Company	Ohio, Colorado	Gold, Silver, Lead

OPERATING MINES IN HINSDALE COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Chicago Climax	Ohio City	E. R. Williams and Assoc.	Gunnison	Gold
Columbine (a)	Whitepine	C. F. Walburn and Assoc.	1934 Bragdon Ave., Pueblo	(c)
Earl W. Lode	Gunnison	A. Warburton	Gunnison	(c)
Eureka	Pitkin	Eureka Company	400 Mining Exchange Bldg., Colorado Springs	
Morning Star	Whitepine	Morning Star Mines	Whitepine	Silver, Lead, Zinc
Mountain Boy	Pitkin	Pitkin Mountain Boy Mining Co.	Pitkin	Gold, Silver, Lead, Zinc
Paymaster Group	Gunnison	Manganese Mines Co. of America	609 E. and C. Bldg., Denver	Manganese
Roosevelt	Pitkin	Roosevelt Mines and Elec. Co.	Pitkin	Gold (c)
Star-Independence	Crested Butte	Star-Independence Lease	Crested Butte	Silver, Lead
Stewart and Clara L.	Glacier Siding	Stewart Mining Company	Crested Butte	Gold, Silver, Lead, Zinc
Tenderfoot Tunnel	Whitepine	Akron Mines	1410 Grant St., Denver	Gold, Silver, Lead, Zinc
OPERATING MINES IN HINSDALE COUNTY, 1927				
Name	Location	Operator	Address	Character of Products
Belle of the West	Lake City	Belle of the West Mining Co.	Lake City	Silver, Lead, Copper, Zinc
Big Blue	Lake City	Victor Johnson	3961 Wynkoop St., Denver	Gold, Silver, Lead, Zinc
Big Casino	Lake City	Carman Brothers	Lake City	Gold, Silver, Lead, Zinc
Black Crook	Lake City	Steinbech, McKee and Hoffman	Lake City	Gold, Silver, Lead, Zinc
Empire Chief	Lake City	Empire Chief Mining Company	505 U. S. National Bank Bldg., Denver	Gold, Silver, Lead, Zinc
Fanny Fern	Lake City	Fanny Fern Mines Co., Inc.	Lake City	Silver
General Sherman-Gladiator	Lake City	Great West Mining and Exploration Company	525 Central Savings Bank Bldg., Denver	Gold, Silver, Lead, Zinc
Golden Wonder	Lake City	Golden Wonder M. and M. Co., William Davies	Littleton	Gold
Little Casino	Lake City	W. C. Martin	Lake City	Gold, Silver, Lead, Zinc (c)
Ocean Wave (a)	Lake City	Ocean Wave Leasing Co. Herman Emperius	Alamosa	Gold, Silver, Lead, Zinc (c)
Ute and Ulay	Lake City	M. B. Burke Mining and Investment Co.	301 Humboldt St., Denver	Gold, Silver, Lead, Zinc
(a) Operated for part of the year only				
(c) No production in 1927				
(m) Mill operated in connection with mine				

OPERATING MINES IN LAKE COUNTY, 1927

Name	Location	Operator	Address	Character of Products
A. Y. and Minnie	Leadville	{	Henrietta Mines Company.....228 East 8th St., Leadville...	Silver, Lead, Zinc, Manganese
Adams Shaft	Leadville		John O'Fay and Dave Holden..... Harrison Ave., Leadville	Zinc
Adelaide	Leadville		Bartell Leasing Company.....406 East Seventh St., Leadville. Silver, Lead	
Baby Shaft	Leadville		Adams Lease.....Box 604, Leadville	Lead
			Terrible Mining Company.....120 Broadway, New York	Lead (c)
Canterbury Tunnel	Leadville		Iron Silver Mining Company.....120 South Toledo Ave., Leadville	Manganese
Climax (m)	Climax		Leadville Mine Development Co.....Leadville	(c)
Evelyn	Leadville		Climax Molybdenum Company.....61 Broadway, New York City..Molybdenum	
Fanny Rawlings	Leadville		Evelyn Lease.....Leadville	Manganese
Fortune	Leadville		Fyfe Lease.....200 East Sixth St., Leadville..Gold, Silver, Lead, Copper, Zinc	
Gilt Edge	Leadville		Fortune Lease.....Box 252, Leadville.....	Gold, Silver, Lead, Zinc
Hagerman Shaft	Leadville		O. O. Swanson	Gold, Silver, Lead, Manganese
Helena (a)	Leadville		Leadville Consolidated Mining Co.....216 East Ninth St., Leadville..Lead	
Henrietta	Leadville		Golden Rod Mining and Smelting Corp.....Box 592, Leadville	(c)
Hibchey	Leadville		Henrietta Mines Company	Silver, Lead, Zinc, Manganese
Highland Chief	Leadville		Seventh Street Mining Company.....109 East Eleventh St., Leadville	Silver, Lead
Ibex	Leadville		Highland Chief Leasing Company.....600 West 6th St., Leadville	Gold, Silver, Lead
Lillian	Leadville		Ibex Mining Company	Lead, Zinc
Louisville	Leadville		Lillian Mining Company	Lead, Silver, Lead (c)
Matchless No. 6 Lease	Leadville		McMorrow Lease	(c)
Modoc	Leadville		E. D. White	(c)
New Monarch	Leadville		Dr. J. H. Heron	Box 593, Leadville
			Howard H. Utley, Trustee	Savoy Hotel, Denver.....
Penrose	Leadville		Penrose Mines Company	Florence
Ponsardin	Leadville		Charles Anderson and Assoc.	Lead, Silver, Lead, Zinc
Pyrenees and Greenback	Leadville		Leadville Deep Mines Company.....Bank Annex Bldg., Leadville..Zinc	
St. Anne (a)	Leadville		William Johnston and Martin Blatnik.....520 West Third St., Leadville..(c)	
Seneca	Leadville		Henrietta Mines Company	228 East 8th St., Leadville.....Silver, Lead, Zinc
Silver Spoon	Leadville		Silver Spoon Development Company.....222 Metropolitan Bldg., Denver..Gold, Silver, Lead, Zinc	
Star Mine Group	Leadville		Cramer and Company	Toledo Ave., Leadville
Stone Shaft	Leadville		Peterson Lease	311 East Third St., Leadville..Silver, Lead

Tucson	Leadville	Brink Lease	140 South Toledo Ave., Leadville	Silver, Lead
Valley	Leadville	Luema Mining Company	1343 High St., Denver	Gold, Silver, Lead
Yak	Leadville	Yak Mines, American Smelting and Refining Company	Leadville	Gold, Silver, Lead, Zinc

OPERATING MINES IN LA PLATA COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Gold King (m)	La Plata	La Plata Mines Company	La Plata	Gold, Silver
May Day	Hesperus	May Day Development Co.	Hesperus	Gold, Silver

OPERATING MINES IN LARIMER COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Free Gold (a)	Log Cabin	Colonial Investment Co.	Log Cabin	Gold, Silver (c)
Gold Bug (a)	Laporte	Gold Bug Mining and Milling Company, Ltd.	Laporte	Gold
Little Helen Nos. 1 and 2 (a)	Log Cabin	George Wirick	807½ N. Hudson Ave., Hollywood, California	Gold (c)
Prodigal	Manhattan	John W. Rigdon	225 Matthews St., Fort Collins	Gold, Silver, Copper
Rockfield Group	Manhattan	S. A. Pendergast	Log Cabin	Gold
Windy Point	Manhattan	L. W. Mills and Haven	Log Cabin	Gold

OPERATING MINES IN MINERAL COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Bethel Group	Creede	Bethel Mining and Leasing Co.	3730 So. Grand Ave., Los Angeles, California	(c)
Commodore	Creede	Withdraw-Commodore Mining Co.	Creede	Gold, Silver, Lead
Eclat	Creede	Eclat Lease, Fred Monkemeyer	Creede	Gold, Silver
Equity	Creede	North Amethyst Mining Co.	107 West 3rd St., Pueblo	Gold, Silver
Last Chance, New York and Volunteer	Creede	Morgan and Sloan, Lessees	Creede	Gold, Silver
Monon	Creede	Norman Alsbaugh	Creede	Fluorspar
Wagon Wheel Gap (m)	Wagon Wheel Gap	Colorado Fuel and Iron Co.	820 Boston Bldg., Denver	Fluorspar

(a) Operated for part of the year only (c) No production in 1927 (m) Mill operated in connection with mine

OPERATING MINES IN OURAY COUNTY, 1927

Name	Location	Operator	Address	Character of Products
American Nettie (m)	Ouray	Mutual Gold Mines, Inc.	928 Foster Bldg., Denver	Gold, Silver, Lead, Copper, Zinc
Barstow (m)	Ouray	The Barstow Mine	42 Broadway, New York, N.Y.	Gold, Silver, Lead, Copper, Zinc
Beaver Belfast	Ironton	Beaver Belfast Mines Co.	Ouray	Gold, Silver, Lead, Copper, Zinc
Bull Durham (a)	Ouray	A. E. Ackerson	Ouray	Gold, Silver (c)
Camp Bird (m)	Ouray	Camp Bird Leasing Company	Ouray	Gold, Silver, Lead, Copper, Zinc
Indiana Group	Ouray	Thomas B. Crawford	Ouray	Gold, Silver, Lead, Copper, Zinc
Lucky Twenty (a)	Ouray	W. R. Ritchie	Ouray	Gold, Silver, Lead, Copper, Zinc (c)
Magnet (a)	Ouray	John P. Martin	Ouray	Lead, Zinc (c)
Pony Express (a)	Ouray	Mutual Gold Mines, Inc.	928 Foster Bldg., Denver	Gold, Silver, Lead, Zinc
San Juan Chief, etc.	Mineral Point	Lake Mountain Mining and Reduction Company	208 Kahl Bldg., Davenport, Iowa	Gold, Silver, Lead, Copper, Zinc (c)
Sutton	Ouray	Colorado Incorporated Mines Co.	Box 550, Ouray	Gold, Silver, Copper, Zinc
Syracuse Tunnel	Ouray	Bachelor Consolidated Mines Co.	Ouray	Gold, Silver, Lead, Zinc, Manganese
Tunnel Plant (a)	Ouray	Camp Bird Tunnel, Mining and Transportation Co.	307 Colorado National Bank Bldg., Denver	(c)

OPERATING MINES IN PARK COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Black Prince (a)	Lake George	Lost Park Mining Company, Chas. D. Courtright	Littleton, Colorado	(c)
Copper Chief	Webster	Nicholas Tomeo and Co.	Cassells	Gold, Silver, Lead, Copper, Zinc
Hoil (a)	Alma	Ford Mining and Milling Co.	241 Coronado Bldg., Denver	Bismuth
Home Run (a)	Webster	William Lambie	Cassells	Silver (c)
London (m)	Alma	London Gold Mines Company	Alma	(c)
Mineral Park	Alma	Mineral Park Mines, Inc.	805-12th St., Greeley	Gold, Silver, Lead, Zinc
Missouri	Webster	C. M. Snyder	Cassells	Gold, Silver, Copper, Zinc

Northside London	Alma	Bagdad Smelting and Refining Co.	Alma	Gold
Ophir Tunnel (a)	Alma	M. B. Burke Mining and Investment Co.	301 Humboldt St., Denver	(c)
Russia	Alma	Redman Mines Company	915 Foster Bldg., Denver	(c)
Sweet Home	Alma	Sweet Home Gold and Silver Mining and Milling Co., Inc.	1233-15th St., Denver	Gold, Silver, Lead, Copper, Zinc

OPERATING MINES IN PITKIN COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Cowenhoven Tunnel	Aspen	Continental Divide Development Co.	712 U. S. National Bank Bldg., Denver	
Durant	Aspen	Smuggler Leasing Company	Aspen	Silver, Lead
Durgen Lease	Aspen	David R. C. Brown	Aspen	Silver, Lead
Hope Tunnel	Aspen	Hope Mining, Milling and Leasing Co.	Aspen	Silver, Lead
Hurricane (a)	Aspen	Hurricane Development Co.	Aspen	(c)
Martin Silver Lead	Aspen	Lincoln Gulch Metal Mines Co.	Aspen	Gold, Silver, Lead, Zinc (c)
Mary B.	Aspen	Mary B. No. 2 Leasing Assoc.	Box 187, Aspen	(c)
Midnight	Aspen	Midnight Mining Company	Aspen	(c)
Park Tunnel	Aspen	Last Dollar Lease	Aspen	Lead
Pride of Aspen	Aspen	Mary B. No. 2 Leasing Assoc.	Box 187, Aspen	Silver (c)
Smuggler (m)	Aspen	Smuggler Leasing Company	Aspen	Silver, Lead, Zinc
Veteran Tunnel	Aspen	Spar Consolidated Mines Co.	Aspen	Silver, Lead, Zinc

OPERATING MINES IN RIO GRANDE COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Golconda Group	Summitville	Ellithorpe-Carroll-Pickens and King	Del Norte	Gold, Silver
Summitville Mines	Summitville	Summitville Mines Company	Del Norte	Gold
Miser, etc.	Monte Vista	Marian Mining Company	506 First Nat. Bank Bldg., Denver	Gold, Silver, Lead, Copper

OPERATING MINES IN RIO GRANDE AND ARCHULETA COUNTIES, 1927

Name	Location	Operator	Address	Character of Products
Treasure Mountain	Durango	Treasure Mountain Mining, Milling and Transportation Co.	Box 1108, Durango, Colorado	(c)
(a) Operated for part of the year only		(c) No production in 1927	(m) Mill operated in connection with mine	

OPERATING MINES IN ROUTT COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Blue Jay	Hahns Peak	Charles E. Blackburn	Hahns Peak	Gold, Silver
Lula Group (a)	Clark	George H. Franz	Clark	(c)
Royal Flush	Columbine	Hahns Peak Gold Mining and Milling Co.	Room 3, Algoma Bldg., Oshkosh, Wisconsin	Gold, Silver, Lead, Copper, Zinc

OPERATING MINES IN SAGUACHE COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Baltimore	Bonanza	B. E. Campbell and A. H. Gibbs	Bonanza	Lead, Zinc
Bonanza	Bonanza	St. Louis Smelting and Refining Co.	722 Chestnut St., St. Louis, Missouri	Lead, Zinc
Orient	Mineral Hot Springs	Colorado Fuel and Iron Co.	820 Boston Bldg., Denver	Iron, Manganese
Pershing	Villa Grove	{ Express-Headlight Mining and Development Co. { Texas-Colorado Mining Company	Villa Grove Electra, Texas	Manganese
Rawley (m)	Bonanza	Rawley Mines, Inc.	1718 California St., Denver	Gold, Silver, Lead, Copper, Zinc
Rico (a)	Bonanza	Ashley and Shaner	Bonanza	Gold, Silver, Copper
Wheel of Fortune	Bonanza	O. J. Montgomery and Assoc.	Monte Vista	Silver, Lead, Zinc
Wide Awake	Bonanza	Monte Mining and Leasing Co.	Monte Vista	Silver, Lead, Zinc

OPERATING MINES IN SAN JUAN COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Aspen	Silverton	Cina Brothers and Hinkley	Silverton	Gold, Silver, Lead, Copper, Zinc
Brooklyn (a)	Silverton	Carney and Offerman	Ouray	Gold, Silver (c)
Caledonian (m)	Eureka	Caledonian Mining and Milling Co.	Eureka	Gold, Silver, Lead, Zinc
Gareyowen (a)	Howardsville	Philip Flynn	Silverton	(c)
Iron Magnet	Silverton	Louis Ressouches	Silverton	Gold, Silver, Lead, Copper
Lackawanna	Silverton	Lackawanna Mining Company	278-25th St., Ogden, Utah	Gold, Silver, Lead, Copper, Zinc
Little Nation (m) (a)	Howardsville	Royal Charter Mining Company	422 W. 62 Ter., Kansas City, Missouri	Copper, Zinc

Lucky Jack (a).....	Mineral Point.....	J. E. Hanson and Son.....	Delta.....	Gold, Silver (c)
Mayflower.....	Silverton.....	Shenandoah, Dives Syndicate.....	1000 Grand Avenue Temple, Kansas City, Missouri.....	Gold, Silver, Lead, Copper, Zinc (c)
Silver Lake.....	Silverton.....	American Smelting and Refining Co.....	120 Broadway, New York.....	Gold, Silver, Lead, Copper, Zinc
Sunnyside (m).....	Eureka.....	Sunnyside Mining and Milling Co.....	Eureka.....	Gold, Silver, Lead, Copper, Zinc

OPERATING MINES IN SAN MIGUEL COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Alta (m).....	Telluride.....	John M. Wagner.....	Telluride.....	Gold, Silver, Lead, Copper (c)
Badger Tunnel (a).....	Telluride.....	Summit Metal Mines Corporation.....	Telluride.....	Gold, Silver, Lead (c)
Black Bear.....	Telluride.....	Isak Partanen.....	Telluride.....	Gold, Silver, Lead, Copper, Zinc
Butterfly.....	Ophir.....	Butterfly Consolidated Mines, Inc.....	884-28th St., Milwaukee, Wisconsin.....	Gold, Silver, Lead, Copper
Carbonero (m).....	Ophir.....	Girardi and Anderson.....	Telluride.....	Gold, Silver, Lead, Copper
Crown Point.....	Ophir.....	Gold Crown Mining Company.....	415 Temple Ct. Bldg., Denver.....	Gold, Silver Copper
San Bernardo (m).....	Ophir.....	Otto Mining Company.....	Matterhorn.....	Gold, Silver, Lead, Copper, Zinc
Silver Bell.....	Ophir.....	Ophir Loop Mines Company.....	Ophir.....	Gold, Silver, Lead
Smuggler Union (m).....	Telluride.....	Smuggler-Union Mining Company.....	Telluride.....	Gold, Silver, Lead, Copper, Zinc
Tomboy (m).....	Telluride.....	{ Tomboy Mines Company..... { Tomboy Gold Mines Co. Ltd.....	{ Telluride..... { London, England.....	{ Gold, Silver, Lead, { Copper, Zinc

OPERATING MINES IN SUMMIT COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Bell.....	Montezuma.....	Bell Mining Company.....	Montezuma.....	Silver, Lead
Carpenter Placer.....	Breckenridge.....	F. A. Peabody and Assoc.....	Breckenridge.....	(c)
D. and B. Adit.....	Breckenridge.....	Detweiler-Bribach Mining Co.....	Breckenridge.....	Lead (c)
Detroit.....	Breckenridge.....	Aco Mining Company.....	415 Lexington Ave., New York, N. Y.....	Gold, Silver, Lead
Dunkin (a).....	Breckenridge.....	Dunkin Leasing Company.....	Breckenridge.....	Lead (c)
Eldorado (m).....	Breckenridge.....	Gold Star Mines Corporation.....	Breckenridge.....	Gold, Silver
Etta M.	Frisco.....	Mine Development Company.....	Frisco.....	Gold, Silver
(a) Operated for part of the year only		(c) No production in 1927	(m) Mill operated in connection with mine	

OPERATING MINES IN SUMMIT COUNTY, 1927—Continued

Name	Location	Operator	Address	Character of Products
Extension Mill	Breckenridge	Steiner Mines Corporation	331-14th St., Denver	Gold, Silver, Lead
Four-Most Governor	Frisco	Four-Most Mining and Milling Co.	Frisco	Gold, Silver, Lead
	Breckenridge	Dr. Irving Hunter	Independence Bldg., Colo. Springs	(c)
King Solomon	Frisco	King Solomon Mining Company	526 Exchange Bldg., Denver	
New York	Montezuma	Wigton and Long Co.	Okmulgee, Oklahoma	Silver, Lead, Zinc
Owl Tunnel	Breckenridge	Aco Mining Company	415 Lexington Ave., New York, N. Y.	
Pennsylvania (m)	Montezuma	Consolidated Pennsylvania Mines Inc.	327 Colo. Nat. Bank Bldg., Denver	Gold, Silver, Lead, Copper, Zinc
Puzzle	Breckenridge	Washington Mines Company	Foster Bldg., Denver	
Royal Tiger (m)	Tiger	Royal Tiger Mines Company	Tiger	
St. John (m)	Montezuma	H. E. McCray, W. N. Head	Montezuma	
Seven-Thirty	Breckenridge	Aco Mining Company	415 Lexington Ave., New York, N. Y.	
Square Deal (a)	Frisco	Frisco Mining Company	2652 Clermont St., Denver	Gold, Silver, Lead, Zinc
Wellington (m)	Breckenridge	Wellington Mines Leasing Co.	Breckenridge	

OPERATING MINES IN TELLER COUNTY, 1927

Name	Location	Operator	Address	Character of Products
Abe Lincoln	Victor	Stratton Lease	Victor	Gold
Blue Bird	Cripple Creek	Silver Leaf Metals, Inc.	614 Ideal Bldg., Denver	Gold (c)
Conundrum	Cripple Creek	Midget Lease	Cripple Creek	Gold
Cresson	Cripple Creek	Cresson Cons. Gold Mining and Milling Co.	Colorado Springs	Gold
Delmonico	Victor	Delmonico Mining Corporation	Suite 909, 49 Wall St., New York, N. Y.	Gold (c)
Elkton	Cripple Creek	The Elkton Company	349 E. Bennett Ave., Cripple Creek	Gold (c)
El Paso (a)	Cripple Creek	One Hundred Gold Mining Co.	Box 426, Cripple Creek	Gold
Forest Queen	Cripple Creek	Queen Metals Company	Cripple Creek	Gold (c)
Gold Bond	Cripple Creek	Vuichoud and Company	16 W. Williamette, Colo. Springs	Gold
Gold Dollar	Cripple Creek	New Gold Dollar Mining Co.	347 East Bennett Ave., Cripple Creek	Gold
Goldenrod	Cripple Creek	Golden Rod Mining and Milling	Co. 305 West May St., Cripple Creek	Gold
Granite	Victor	Granite Gold Mining Company	301 Mining Exchange Bldg., Colorado Springs	Gold

Gray Eagle (a)	.....Cripple Creek	James and Laura B. Sweetser	.....Cripple Creek	.....Gold	(c)
Hooster (a)	.....Cripple Creek	Cudahy Gold Mining Co.	.....310 Exchange Bldg., Colo. Springs	.....Gold	(c)
Index (a)	.....Cripple Creek	Gold Index Leasing Company	.....1006 Patterson Bldg., Denver	.....Gold	(c)
Isabella	.....Cripple Creek	Empire Lee Mining Company	.....222 Burns Bldg., Colo. Springs	.....Gold	(c)
Jay Gould	.....Cripple Creek	Jay Gould Mining Company	.....Cripple Creek	.....Gold	
Jerry Johnson	.....Cripple Creek	Oston Company	.....349 East Bennett Ave., Cripple Creek	.....Gold	
Los Angeles	.....Victor	Stratton Lease	.....Victor	.....Gold	
Modoc	.....Victor	Modoc Leasing Company	.....Victor	.....Gold	
Moose (a)	.....Cripple Creek	J. F. Maynard	.....1416 Genesee St., Utica, New York	.....Gold	
Nighthawk (a)	.....Cripple Creek	Nighthawk Lease, John Anderson	.....Cripple Creek	.....Gold	(c)
Orpha May	.....Victor	Stratton Lease	.....Victor	.....Gold	
Pessimist (a)	.....Cripple Creek	C. W. Kurie and Assoc.	.....Exchange Nat. Bank Bldg., Colorado Springs	.....Gold	(c)
Pinnacle	.....Cripple Creek	Gold Pinnacle Mining Co.	.....317 East Golden Ave., Cripple Creek	.....Gold	
Plutocrat	.....Cripple Creek	Benson and Nickoli	.....Cripple Creek	.....Gold	
Portland (m)	.....Victor	New El Paso Mines Inc.	.....404 Patterson Bldg., Denver	.....Gold	
Queen	.....Cripple Creek	Portland Gold Mining Company	.....310 Mining Exchange Bldg., Colorado Springs	.....Gold	
Rose Nicol	.....Cripple Creek	Queen Exploration, Inc.	.....Box 186, Colorado Springs	.....Gold	
Sangre De Cristo	.....Cripple Creek	United Gold Mines Company	.....349 E. Bennett Ave., Cripple Creek	.....Gold	
Santa Rita	.....Victor	Reclamation Metal Mines Co.	.....7 N. Tejon St., Colo. Springs	.....Gold	
Solomon	.....Cripple Creek	Wm. Casson and A. S. Kuzmicky	.....Victor	.....Gold	
South Burns	.....Cripple Creek	United Gold Mines Company	.....349 E. Bennett Ave., Cripple Creek	.....Gold	
Strong (a)	.....Victor	Neusta Ventura Mining Corp.	.....167 Villa St., Rochester, N. Y.	.....Gold	
Thompson	.....Elkton	Acacia Gold Mining Company	.....716 North Wahsatch, Colo. Springs	.....Gold	
Vindicator	.....Independence	Wash and Company	.....Victor	.....Gold	
		Elkton Company	.....349 E. Bennett Ave., Cripple Creek	.....Gold	
		United Gold Mines Company	.....349 E. Bennett Ave., Cripple Creek	.....Gold	

(a) Operated for part of the year only (c) No production in 1927 (m) Mill operated in connection with mine

OPERATING QUARRIES AND CLAY PITS, 1927

Town	County	Name	Product	Operator	P. O. Address
La Junta	Bent	Marlman	Limestone	L. W. Lewis Sons	317 Commercial St., Emporia, Kansas
Jamestown	Boulder	Feldspar	Feldspar	E. W. Lehman	Jamestown
Salida	Chaffee	Granite	Granite	E. T. Bowen	629 "H" St., Salida
Monarch	Chaffee	Doctor	Limestone	Monarch Contact M. M. and D. Company	Salida
Monarch	Chaffee	Burton	Limestone	Burton Quarry	Garfield
Salida	Chaffee	Salida Granite	Granite	Salida Granite Corporation	Salida
Castle Rock	Douglas	Brick Yard	Plastic Clay	A. C. Nipko	Castle Rock
Castle Rock	Douglas		Plastic Clay	H. G. Johnson and L. V. Conner	Castle Rock
Larkspur	Douglas	Larkspur Clay Pit	Plastic Clay	W. S. Hawn	Larkspur
Castle Rock	Douglas	Perfold Clay	Plastic Clay	F. C. Perfold	Castle Rock
Husted	El Paso	Husted Clay	Limestone	Standard Fire Brick Co.	Box 654, Pueblo
Manitou	El Paso	Western Lime	Limestone	Western Lime Company	551 Equitable Bldg., Denver
Wellsville	Fremont	Blue Lime	Limestone	Nigro and Son Limestone Co.	647 E. St., Salida
Canon City	Fremont	Burnito	Limestone	S. Vernon St. John	1130 Macon Ave., Canon City
Howard	Fremont	Calcite	Limestone	Colorado Fuel and Iron Co.	820 Boston Bldg., Denver
Coaldale	Fremont	Coaldale Gypsum	Gypsum	T. A. Gilray	Coaldale
Portland	Fremont	Colo. Portland	Limestone	Colo. Portland Cement Co.	305 Ideal Bldg., Denver
Concrete	Fremont	Concrete Cement	Limestone	United States Portland Cement Co.	305 Ideal Bldg., Denver
Canon City	Fremont	Diamond Fire Brick	Fire Clay	Diamond Fire Brick Co.	Canon City
Canon City	Fremont	Dolomite Quarry	Dolomite	Thomas and Frankenberg	401 Rudd Ave., Canon City
Canon City	Fremont	Eight Mile Park	Limestone	Standard Fire Brick Co.	Box 654, Pueblo
Canon City	Fremont	Hoover	Limestone	Frank Hoover	Parkdale, Micantite Route, Canon City
Salida	Fremont	McLaughlin	Granite	Nan T. McLaughlin	1015 Osage St., Denver
Cotopaxi	Fremont	Noon	Granite	C. W. McLaughlin	1015 Osage St., Denver
Calcite	Fremont	Calcite	Limestone	Colorado Lime Company	804 Security Bldg., Denver
Rito	Fremont	Rose Pink	Granite	Salida Granite Corporation	Salida
Canon City	Fremont	Skylone and Climax	Fire Clay	Jewett Fire Brick Company	11th and Water Sts., Canon City
Wellsville	Fremont	Wellsville	Travertine	Natural Resources Exploration Co.	Salida
Glenwood Spgs.	Garfield	Holly Sugar	Limestone	Holly Sugar Corporation	Glenwood Springs
Marble	Gunnison	Colo. Marble	Marble	Colorado Marble Company	1403 Liberty Bank Bldg., Buffalo, N. Y.
Marble	Gunnison	Yule Marble	Marble	Colo. Cons. Yule Marble Co.	Marble
Chamblin Spur	Huerfano	Chamblin Spur Clay	Plastic Clay	Standard Fire Brick Co.	Box 654, Pueblo
Golden	Jefferson	Apex	Plastic Clay	G. W. Parfet	Golden
Golden	Jefferson	Coors	Plastic and Fire Clay	Coors Porcelain Company	Golden
Golden	Jefferson	Denver Fire Clay	Fire Clay	Colorado Crucible and Clay Company	Box 1107, Denver

Golden.....	Jefferson.....	Denver Pressed Brick.....	Plastic Clay.....	Denver Pressed Brick Co.....	Temple Court Bldg., Denver
Golden.....	Jefferson.....	No. 10.....	Plastic Clay.....	E. Logan.....	Golden
Golden.....	Jefferson.....	Golden Fire Brick.....	Plastic and Fire Clay.....	Golden Fire Brick Co.....	Golden
Golden.....	Jefferson.....	Goodrich and Pomroy.....	Fire Clay.....	Grant Parfet.....	Golden
Golden.....	Jefferson.....	Hard Rock.....	Granite.....	Hard Rock Quarries, Inc.....	411 Majestic Bldg., Denver
Golden.....	Jefferson.....	New.....	Fire Clay.....	Roy Gardner.....	Golden
Golden.....	Jefferson.....	No. 10.....	Fire Clay.....	George Parfet.....	Golden
Golden.....	Jefferson.....	North Fire Clay.....	Fire Clay.....	E. Logan.....	Golden
Golden.....	Jefferson.....	Parfet.....	Fire Clay.....	Denison Clay Co.....	Golden
Golden.....	Jefferson.....	Plastic No. 10 and White.....	Plastic Clay.....	El Logan.....	Golden
Golden.....	Jefferson.....	Rockwell.....	Plastic Clay.....	Mrs. George W. Parfet.....	Golden
Golden.....	Jefferson.....	Rubey.....	Plastic Clay.....	H. M. Rubey Clay Co.....	Golden
Golden.....	Jefferson.....	Sanders.....	Plastic Clay.....	Denver Pressed Brick Co.....	219 Temple Court Bldg., Denver
Golden.....	Jefferson.....	Shepherd.....	Plastic Clay.....	Thomas Shephard.....	Golden
Rockwood.....	La. Plata.....	Bell.....	Limestone.....	John F. Bell.....	Rockwood
Ingleside.....	Larimer.....	Acosta.....	Limestone.....	Fred Acosta.....	Laporte
Ingleside.....	Larimer.....	Clark.....	Limestone.....	Clark Quarry and Develop. Co.....	Box 216, Fort Collins
Ingleside.....	Larimer.....	Josephson.....	Limestone.....	Fort Collins Limestone Co.....	Box 216, Fort Collins
Bellvue.....	Larimer.....	Ingleside.....	Limestone.....	Josephson Brothers.....	Bellvue
Ingleside.....	Larimer.....	Portland Cement.....	Limestone.....	Ingleside Limestone Co.....	Bellvue
Fort Collins.....	Larimer.....	U. S. Gypsum.....	Gypsum.....	Colorado Portland Cement Co.....	Laporte
Loveland.....	Larimer.....	Walters.....	Limestone.....	United States Gypsum Co.....	300 West Adams St., Chicago
Ingleside.....	Larimer.....	Roberts.....	Limestone.....	O. J. Walters.....	Ingleside
Trinidad.....	Las Animas.....	Shale Plant.....	Fire Clay.....	Owl Canon Quarry Co.....	139 Pearl St., Fort Collins
La Junta.....	Otero.....	Clay pit.....	Clay.....	Trinidad Brick and Tile Co.....	Trinidad
Pueblo.....	Pueblo.....	Eller Slag.....	Slag.....	Clay Products, Inc.....	La Junta
Pueblo.....	Pueblo.....	Lime.....	Limestone.....	F. B. Arthur and A. L. Allen.....	301 West 3rd St., Pueblo
Pueblo.....	Pueblo.....	Livesey.....	Limestone.....	Colorado Fuel and Iron Co.....	820 Boston Bldg., Denver
Pueblo.....	Pueblo.....	Nellie Helen.....	Fire Clay.....	Livesey Quarry Company.....	First National Bank, Pueblo
Pueblo.....	Pueblo.....	Standard.....	Fire and Plastic Clay.....	Colorado Fire Clay Co.....	Stone City
Pueblo.....	Pueblo.....	Summit.....	Fire Clay.....	Standard Fire Brick Co.....	Box 654, Pueblo
Pueblo.....	Pueblo.....	Turkey Creek.....	Flint and Plastic Fire Clay.....	Summit Pressed Brick and Tile Company.....	13th and Erie Sts., Pueblo
Pueblo.....	Pueblo.....	Fire Clay.....	Pueblo Clay Products Co.....		325 East 8th St., Pueblo

OPERATING MILLS AND SMELTERS, 1927

Character of Plant	Town	County	Operator	P. O. Address
Arsenic and Cadmium R'fy.	Denver		Adams and Denver American Smelting and Refining Co.	120 Broadway, New York City
Ore Sampler	Idaho Springs		Clear Creek Gilpin Ore Co.	Idaho Springs
Cyanidation	Colorado Springs	El Paso	Golden Cycle Mining and Reduction Company	Exchange National Bank Bldg., Colorado Springs
Concentration	Rico	Dolores	International Smelting Company	818 Kearns Bldg., Salt Lake City, Utah
Zinc Oxide Mfg.	Canon City	Fremont	Empire Zinc Company	Canon City
Zinc Oxide Manufacture	Florence	Fremont	River Smelting and Refining Co.	Florence
Chemical Ore Reduction	Rifle	Garfield	United States Vanadium Company	30 East 42nd St., New York City
Lead Smelter	Leadville	Lake	American Smelting and Refining Co.	120 Broadway, New York City
Flotation Custom Mill	Leadville	Lake	Colorado Zinc Lead Company	604 First Nat'l Bank Bldg., Denver
Lead Smelter	Durango	La Plata	American Smelting and Refining Co.	120 Broadway, New York City
Ore Sampler	Victor	Teller	Eagle Samplers, Incorporated	316 Symes Bldg., Denver
Compressed Air Plant	Cripple Creek	Teller	Teller County Air Company	Cripple Creek

OPERATING PLACER MINES AND DREDGES, 1927

Name	Town	County	Operator	P. O. Address
Hydraulic	Granite	Chaffee	International Hydraulic Dredge Co.	2930 Independence Bldg., Colo. Springs, Colo.
Independent Placer	Blackhawk	Gilpin	F. J. Fleiss	Blackhawk
Pay Dirt Placer	Blackhawk	Gilpin	H. H. Wherry and Company	Central City
Blue River Dredge	Breckenridge	Summit	Blue River Placer Mining Co.	Breckenridge
Summit Gold Dredge	Breckenridge	Summit	Summit Gold Mining Company	Breckenridge

OPERATING OIL SHALE PROPERTIES, 1927

GARFIELD COUNTY

Name	Location	Operator	P. O. Address	Product
Indexoline Plant	DeBeque	The Indexoline Company	622 Denham Bldg., Denver	Oil Shale
Washington	DeBeque	Washington Shale Oil and Products Company	DeBeque	Oil Shale

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